OPERATING INSTRUCTIONS AND ASSEMBLY MANUAL

Includes Cirrus 3 Channel FM Radio and XTM Racing 24.7 Engine!

Before operating your new XTM Racing ***X***ST 4WD Truggy RTR, please read and understand the warnings listed on the next page. Failure to do so could lead to injury and/or property damage.

The XTM Racing ***X***ST 4WD Truggy RTR is not intended for persons under 14 years of age, unless closely supervised by an adult.

SPECIFICATIONS

- Length.....533mm/21"
- Width (Front/Rear).....419~425mm/16.5~16.75"
- Height.....165mm/6.5"
- Wheelbase (Adjustable).....349~355mm/13.75~14"
- Weight.....4.13kg/9.1lbs

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Version 1 July 2008

*X*ST 4WD TRUGGY RTR FEATURES

- Factory-Built
- Powerful XTM Racing 24.7 Engine with Pull-Starter
- Aluminium Header and Tuned Pipe
- Full Set of Sealed Ball Bearings for Drive Line
- Factory-Printed Body Shell
- High-Torque, Metal-Geared Steering Servo
- Lay-Down Steering Servo for Lower Centre of Gravity
- Aluminium Threaded Shocks w/3.5mm Shock Shafts
- Bevel Differentials - Front, Rear and Centre
- Heavy-Duty Aluminium Front and Rear Chassis Bracing
- Dust-Resistant Receiver and Battery Boxes
- Adjustable Toe-in, Front and Rear
- Adjustable Camber
- 3mm Aluminium Chassis w/Kicked Up Front End
- 4mm Aluminium Shock Towers
- Chrome-Plated CVDs and Drive Shafts for Greater Strength
- Gearboxes Allow Easy Differential Removal
- Bi-Level Wing for Added Rear Downforce
- Off-Road 'Trackers' Tyres for Maximum Traction
- Dish-Style Racing Wheels (Will Accept a Wide Range of After-Market Tyres)

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Global Hobby Distributors
18480 Bandilier Circle
Fountain Valley, CA 92708

VISIT US ON THE WEB AT
WWW.TEAMXTM.COM

DISTRIBUTED IN EUROPE BY:
Ripmax Ltd.
241 Green Street
Enfield, EN3 7SJ, U.K.

SAFETY WARNINGS

ENGINE WARNINGS

- Never use any fuel in your engine other than glow fuels specifically designed for use in model car engines. Use of any other types of fuel can cause severe damage to your engine and/or personal injury.
  NEVER USE GASOLINE/PETROL OR DIESEL FUEL!
- Never operate your model on any public streets. This could cause traffic accidents, personal injury and/or property damage.
- Glow fuel engines emit exhaust vapors that are poisonous and can be dangerous to your health. It is important that you operate your engine in a very well-ventilated area, preferably outdoors.
- Before starting your engine, make sure that the throttle trim is set to the idle position. Starting your engine at any setting above idle can cause the model to lurch out of your hands.
- When your engine is running, there are certain parts that rotate at high speeds. Be careful not to touch the drive shafts, gears, clutch assembly or any other moving parts. Otherwise, serious injury could result.
- It is normal for your engine and tuned pipe to get very hot during operation. Never touch these parts while they are hot or you could be burned.
- Model engines produce vibration when they are running. It is important to periodically check the engine mounting screws and other assemblies to ensure they are tight. Running your engine with the engine mounting screws loose can lead to severe engine and/or chassis damage.

GLOW FUEL WARNINGS

- Glow fuels like those used in your model engine are extremely poisonous. Follow all the precautions that are printed on the fuel manufacturer's container.
- Keep glow fuel out of the reach of children.
- Glow fuel is extremely flammable. Keep away from high heat, sparks and flame.

GENERAL WARNINGS

- Under no circumstances should you operate your model in crowds of people. Serious injury could result.
- Never operate your model on busy streets or if there are cars around.
- Do not use your model to chase pets or other animals.
- The receiver and battery boxes are not waterproof; therefore, do not drive through water, wet grass, mud or snow.
- Because your model is operated by radio control, it is important to make sure you are always using fresh and/or fully charged batteries (if using NiCDs or NiMHs). Never allow the batteries to run low or you could lose control of the model.
- If your model becomes stuck, allow the engine to idle, then retrieve your model by hand.
- To prevent excessive r.p.m.s from damaging your engine and/or drivetrain components, we suggest reducing throttle while in the air during jumps.

CUSTOMER SERVICE INFORMATION

If you should have trouble with any of the steps listed in these Operating Instructions, or if you find a missing or damaged part in your kit or require additional information, please contact your local distributor at the address below:

In North America:

Global Services
18480 Bandilier Circle
Fountain Valley, CA 92708

Phone: (714) 963-0329
Fax: (714) 964-6236
Email: service@globalhobby.net

In Europe:

Ripmax Ltd.
241 Green Street
Enfield, EN3 7SJ, U.K.

Phone: (0) 20 8282 7500
Fax: (0) 20 8282 7501
Email: xtm@ripmax.com

XTM Racing guarantees this kit to be free from defects in both material and workmanship, at the date of purchase. This does not cover any component parts damaged by use, misuse or modification. **In no case shall XTM Racing's liability exceed the original cost of the purchased kit.**

In that XTM Racing has no control over the final assembly or material used for final assembly, no liability shall be assumed for any damage resulting from the use by the user of the final user-assembled product. By the act of using the final user-assembled product, the user accepts all resulting liability.

INTRODUCTION

The ***X***ST 4WD Truggy RTR is a purpose-built truck meant to handle the different terrain it encounters. With 4mm thick aluminium shock towers, threaded aluminium oil-filled shocks with 3.5mm diameter shock shafts, chrome-plated front universals and 3mm thick aluminium chassis, you'll be sure the ***X***ST 4WD Truggy RTR is ready for back yard bashing or the next trip to the local track. The XTM Racing 24.7 engine with aluminium tuned pipe is the heart of the ***X***ST 4WD Truggy RTR and this power plant has been a reliable source of fun in numerous XTM Racing cars and trucks for many years!

For those who do choose to race the ***X***ST 4WD Truggy RTR, they can be assured that it will perform with beefy 5mm aluminium braces that support the front and rear gearboxes, a mega high-torque metal-geared steering servo, and steel drive train to keep the enjoyment flowing. A race-legal 150cc fuel tank is also fitted for fewer pit stops. Additionally, with its stock wheelbase and steering geometry, the ***X***ST 4WD Truggy RTR will make it through the tightest turns on the track. Take the inside line! From the adjustable camber and toe-in on the front to the adjustable caster on the rear, the ***X***ST 4WD Truggy RTR can be adapted to any condition and driving style that it meets.

This Operating Instructions and Assembly Manual is designed to help you get your new *X*ST 4WD Truggy RTR running as quickly as possible. Included is information on taking your *X*ST 4WD Truggy RTR from the box through its first run. Also included are Pro Tips, a Chassis Tuning Guide and a complete Parts/Option Parts List with detailed Exploded View Assembly Drawings. You will find good tips and recommendations throughout this booklet, so keep it handy for future reference.

POPULAR OPTION PARTS

XTM Racing produces a number of popular option parts for your ***X***ST 4WD Truggy RTR. Please see page 59 for a complete list of current option parts. New option parts are always in the works, so check our website often at www.teamxtm.com.

Sure Start Electric Starter

7075 Steering Knuckles and Hub Carriers

2-Speed Conversion Kit

7075 Front and Rear Lower Suspension Arms

7075 Front Upper Suspension Arms

7075 Suspension Plate and Holders

RECOMMENDED TOOLS AND SUPPLIES

This section lists the recommended tools and supplies that you need to purchase and have onhand to finish assembling and to run and maintain your new ***X***ST 4WD Truggy RTR.

WHAT FUEL DO I USE?

Fuel can make a big difference in the way your engine performs. For the break-in period you should use a fuel specifically designed for R/C car engines that contains no more than 20% nitromethane and 10% ~ 14% oil content. Once the engine has been adequately broken in (about 45 minutes of run-time) you can switch to an R/C car fuel containing up to, but no more than, 30% nitromethane and 10% ~ 14% oil content.

WARNING: We do not recommend using fuels designed for R/C airplane engine use. These fuels do not contain the proper amount of lubricants; therefore, they will cause the engine to overheat and severe damage to the engine will result.

20% Nitro Car Fuel

Use For Break-In and For Normal Use

20% Nitro Car Fuel
(use this fuel for break-in and normal use)

30% Nitro Car Fuel
(use this fuel after break-in for more power)

DO I NEED TO USE A FUEL BOTTLE?

Fuel Bottle

Use This to Fill the Fuel Tank

Yes. Because fuel is packaged in quarts, gallons or litres, you will need to use a smaller bottle with an extension tube to fill the fuel tank. Fueling using this method is much easier, faster and a lot less messy.

HOW DO I REMOVE THE GLOW PLUG?

1/8th Scale 4-Way Wrench

Use This to Remove and Reinstall the Engine's Glow Plug

A long reach glow plug wrench is necessary to easily and quickly remove and replace glow plugs.

WHAT DO I USE TO IGNITE THE GLOW PLUG?

Glow Starter

Use This to Ignite the Engine's Glow Plug

A glow starter is a battery-operated device that, when attached to the glow plug, heats the glow plug so that the engine can start. The glow starter is then removed once the engine is running.

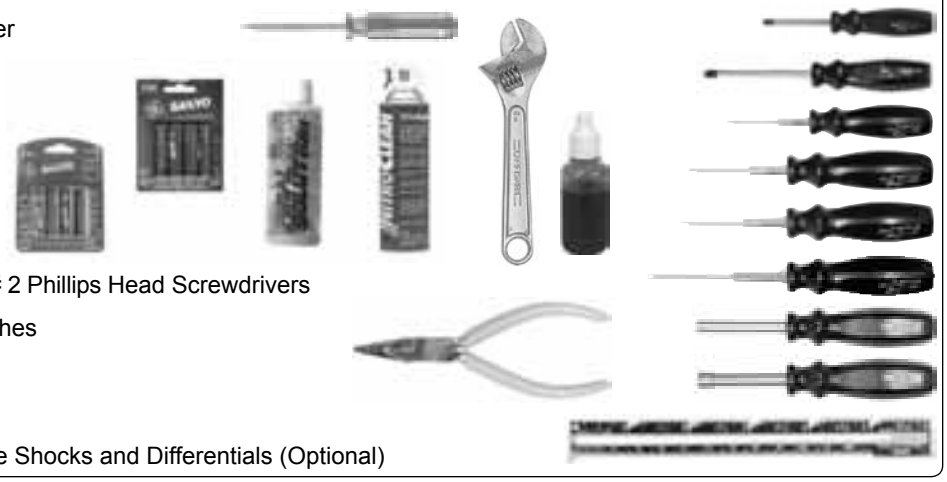
DO I NEED TO PURCHASE EXTRA GLOW PLUGS?

Yes. Even though your XTM Racing 24.7 engine comes with a glow plug already installed, glow plugs wear out, especially during the break-in period; therefore, it's a good idea to have a couple of spares handy. We recommend using a 'medium' or 'hot' heat-range glow plug intended specifically for performance engines like the XTM Racing # 4 or the XTM Racing # 3 during the break-in process. After the break-in process you may want to use a different heat-range glow plug. Do not use glow plugs intended for four stroke airplane engines or glow plugs with an 'idle bar'. Using the wrong type of glow plug will cause the engine to run erratically and make it difficult to tune properly. The wrong type of glow plug could also damage the engine. **AN XTM RACING # 4 GLOW PLUG IS INCLUDED IN THE ENGINE.**

RECOMMENDED TOOLS AND SUPPLIES, CONTINUED....

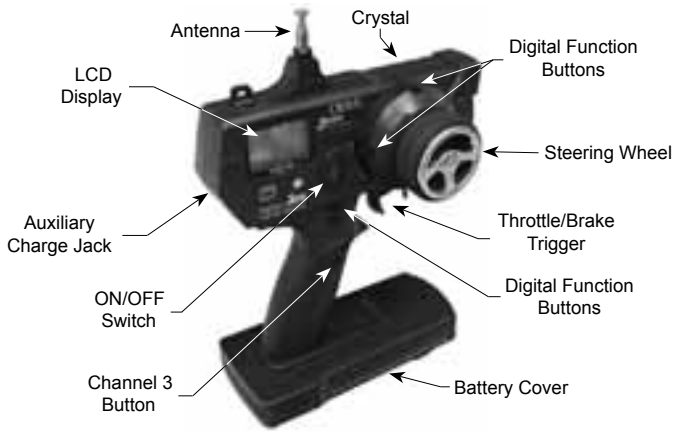
In addition to the items listed previously, the following tools and supplies will also be required to run and maintain your ***X***ST 4WD Truggy RTR:

- 8-Pack 'AA' Alkaline Batteries for Transmitter
- 4-Pack 'AA' Alkaline Batteries for Receiver
- High-Quality After-Run Oil
- XTM Racing Air Filter Oil
- Nitro Car Cleaner
- Metric Ruler
- Small, Flat Blade Screwdriver and #1 and # 2 Phillips Head Screwdrivers
- 1.5mm, 2mm, 2.5mm and 3mm Hex Wrenches
- 5.5mm and 7mm Nut Drivers
- Adjustable Wrench and Needle Nose Pliers
- Assorted Weights of Silicone Oil to Tune the Shocks and Differentials (Optional)



BECOMING FAMILIAR WITH YOUR *X*ST 4WD TRUGGY RTR

Each radio control system comes with a sticker on the transmitter and on the receiver showing which frequency the radio control system operates on (either in the 27MHz, 40MHz or 75MHz band). No two radio systems can operate nearby each other if they are on the same frequency. You can purchase transmitter and receiver crystals separately and change them if you plan on running your ***X***ST 4WD Truggy RTR with other people.



27MHz and 75MHz

These frequencies are legal for use in North America

27MHz and 40MHz

These frequencies are legal for use in Europe, but can vary from country to country

For more information on the features and use of your Cirrus 3CFM transmitter, please refer to the separate User's Guide provided.

Note: The Cirrus 3CFM radio is not available on 75MHz.

Antenna: Transmits the signal from the transmitter to the receiver. The antenna should be completely extended during use.

Auxiliary Charge Jack: For onboard charging when using rechargeable batteries (not supplied).

Battery Cover: This cover houses the 8 'AA' Alkaline batteries (not supplied) that power the transmitter.

Channel 3 Button: Used to operate a third function, like switching to reverse function on a model that features reverse. The channel 3 button is not utilised with the ***X***ST 4WD Truggy RTR.

Crystal: This is the frequency crystal of the transmitter. You can change crystals in both the transmitter and the receiver so that you and your friends can drive at the same time. No two radio control systems nearby can be operated on the same frequency.

Digital Function Buttons: Used to adjust steering and throttle trim, function changes, EPA, dual rates and servo reversing.

LCD Display: Displays all menu screens for function updates, power level indicator, etc.

ON/OFF Switch: Turns the transmitter on and off. A red L.E.D. indicates that the transmitter is turned on. Voltage is displayed on the LCD display.

Steering Wheel: Controls your ***X***ST 4WD Truggy RTR's steering. Turn the wheel to the right and the ***X***ST 4WD Truggy RTR turns right. Turn the wheel to the left and the ***X***ST 4WD Truggy RTR turns left.

Throttle/Brake Trigger: Controls the speed and braking ability of your ***X***ST 4WD Truggy RTR. Pull the trigger to accelerate, release the trigger to decelerate, and push the trigger to brake.

BECOMING FAMILIAR WITH YOUR *X*ST 4WD TRUGGY RTR, CONTINUED....

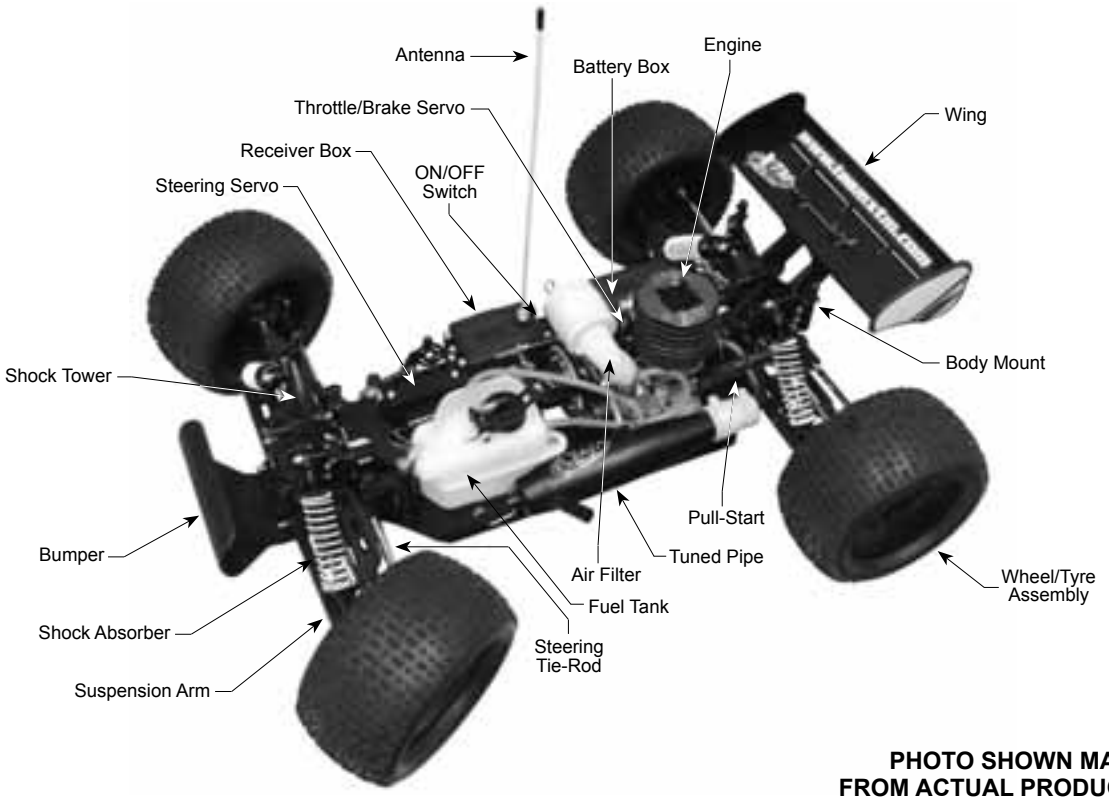


PHOTO SHOWN MAY DIFFER FROM ACTUAL PRODUCTION MODEL

Air Filter: The air filter is made of foam and prevents dirt and debris from entering the engine through the carburettor. The air filter should be 'wet' with air filter oil for maximum efficiency.

Antenna: Receives the signal from the transmitter. The antenna should be completely extended. **Do not cut the antenna shorter.**

Battery Box: The battery box protects the receiver batteries from dust, dirt and oil. **The battery box is not waterproof.**

Body Mount: Made of high-impact nylon plastic for strength, the body mount supports the body.

Engine: The ***X***ST 4WD Truggy RTR includes the powerful XTM Racing 24.7 engine with pull-starter for ease of use and great performance.

Bumper: Made out of high-impact nylon plastic, the bumper protects the chassis from most head-on impacts.

Fuel Tank: The fuel tank holds the fuel that your engine uses. The fuel tank includes a fuel pressure nipple that connects to the tuned pipe to pressurise the fuel system and also features a quick-flip type lid for fast refueling. A splash guard and overflow drain are also featured.

ON/OFF Switch: Turns the receiver on and off.

Pull-Start: Spring recoil system used to start the engine.

Receiver Box: The receiver box protects the receiver from dust, dirt and oil. **The receiver box is not waterproof.**

Shock Absorber: Each shock is oil-filled and uses a spring that is well suited for most off-road conditions. The shocks feature threaded shock bodies that allow the shocks to be easily tuned for different driving conditions. The shocks come standard with # 400 (40 weight) oil and 1.6mm yellow springs.

Shock Tower: Secures the shock absorber while allowing many different geometry settings to suit different track conditions.

Steering Servo: Controls the ***X***ST 4WD Truggy RTR's steering. A 'servo saver' is used to help prevent the servo gears from being stripped out. The ***X***ST 4WD Truggy RTR features a high-torque metal-geared servo for maximum steering power.

Steering Tie-Rod: The tie-rod connects the steering linkage and the steering knuckles. The tie-rods are adjustable so you can make toe-angle adjustments to the front wheels.

Suspension Arm: Helps improve the ***X***ST 4WD Truggy RTR's handling (when coupled to shock absorbers) and braking while ensuring maximum traction (keeps the wheels in contact with the ground) and protects the chassis components from undue stress and strain.

Throttle/Brake Servo: Controls both the ***X***ST 4WD Truggy RTR's acceleration and braking functions.

Tuned Pipe: The tuned pipe is an expansion muffler that greatly increases the power output of the engine.

Wheel/Tyre Assembly: The ***X***ST 4WD Truggy RTR features moulded rubber tyres with a tread pattern that is good for most off-road applications. The wheels are moulded in one piece from lightweight, high-impact plastic for strength.

Wing: Provides downforce to ensure maximum traction when racing. Wing angle can be adjusted to suit different track conditions.

TIPS FROM THE PROS

- Make sure to read these Operating Instructions and Assembly Manual in its entirety before starting. This will allow you to become familiar with the XTM Racing ***X***ST 4WD Truggy RTR, XTM Racing 24.7 Nitro Engine and Cirrus 3CFM radio control system.
- Double-check all of the fasteners to ensure that they're tight.
- Any screws that are threaded directly into metal should be secured into place with threadlock. This will prevent the screws from loosening during use. Screws threaded into nylon or composite material do not require threadlock.
- Do not overtighten any screws that thread into nylon or composite material, or the material may strip out. Screws threaded into nylon or composite material need only be tightened snugly.
- After installing the receiver batteries into the battery holder, fit a rubber band or a nylon cable tie around the battery holder. This will prevent the batteries from coming loose when doing jumps, etc.
- If you have difficulty sliding the receiver antenna wire through the antenna support tube, first pull the antenna wire through your fingers several times to straighten it, then lightly wet the antenna wire with glass cleaner. The glass cleaner will make the antenna wire slide through the support tube much easier.
- When testing the steering, lift the front of the ***X***ST 4WD Truggy RTR off the ground. This will allow the steering system to operate smoothly, without any binding.
- If the carburettor barrel does not open completely when you pull the throttle trigger, adjust the throttle trim on the transmitter until the carburettor barrel opens completely when you pull back fully on the throttle trigger.
- When oiling the air filter element, place the cleaned air filter element in a plastic bag and then apply the air filter oil on it. Close the bag and work the oil into the air filter element. This allows you to work the oil into the element without getting excess oil on your hands.
- When you pinch the fuel line to stop the engine, you must pinch it hard and hold it. The engine will rev up quickly, then stop. We suggest holding the ***X***ST 4WD Truggy RTR while doing this, so that it doesn't lurch out of your hands.
- Other than during the break-in period, always make sure that you install the body when driving your ***X***ST 4WD Truggy RTR. When your ***X***ST 4WD Truggy RTR flips over, the body will help protect the chassis and its components.
- Place the chassis on a dedicated car stand or similar so that all four wheels are suspended off the ground. This ensures that your ***X***ST 4WD Truggy RTR does not accidentally drive away when starting the engine if the idle setting is too high.

PREPARING TO RUN YOUR *X*ST 4WD TRUGGY RTR

Now that you are familiar with the major component parts of your ***X***ST 4WD Truggy RTR, and with the functions of the Cirrus 3CFM transmitter, it's time to prepare your ***X***ST 4WD Truggy RTR for its first run.

IMPORTANT: Before continuing, please double-check that you've read and understood the warnings on page 2. It's important that you understand this information before preparing to run your ***X***ST 4WD Truggy RTR. Also, remember, if you have any questions or encounter any problems, you can contact your local distributor using the Customer Service Information on page 3.

YOUR *X*ST 4WD TRUGGY RTR SHOULD INCLUDE THE FOLLOWING ITEMS SEPARATELY IN THE BOX:

- ***X***ST 4WD Truggy RTR Chassis
- Cirrus 3CFM 3 Channel FM Transmitter
- Transmitter Antenna
- Lexan Body Shell (Printed) and Nylon Wing
- Tyres and Wheels (Glued)
- Body Clips
- Decal Set
- Plastic Parts Set
- Receiver Antenna Support Tube
- Suspension Plate Holders
- Air filter Assembly
- Allen Keys and Wrenches

STEP 1: FINAL ASSEMBLY

❑ Install the wheels onto the chassis, making sure to tighten the wheel retaining nuts firmly, using a 17mm wrench.

☞ Notice that the back of the wheels are moulded to key over the hex-shaped wheel hubs. All four wheels and tyres are the same size.

IMPORTANT: Double-check that the tyres are glued onto the wheels. If they're not, glue the tyres onto the wheels, using C/A tyre glue. See page 51 for information on how to glue the tyres onto the wheels.

- ❑ Push the transmitter antenna down into the moulded hole in the top of the transmitter.
- ❑ Thread the antenna (clockwise) into place and tighten it **gently** until it stops.

IMPORTANT: Do not force the antenna into place or tighten it too strongly. Doing so could cause damage to the antenna and/or transmitter.

- ❑ Check to make sure that the transmitter ON/OFF switch is in the 'OFF' position.
- ❑ Remove the plastic battery cover from the bottom of the transmitter.
- ❑ Install 8 'AA' Alkaline batteries into the battery tray, double-checking to make sure that the polarity (+/-) is correct.
- ❑ Reinstall the battery cover and set the transmitter aside for now.

- ❑ Check to make sure that the receiver ON/OFF switch is in the 'OFF' position. 'ON' and 'OFF' are moulded into the switch cover plate.
- ❑ Open the battery box cover by removing the retaining clip and pulling up on the front of the battery box cover. The battery box cover is hinged at the back.
- ❑ Remove the battery holder from the battery box.

PRO TIP: After installing the batteries into the battery holder in the next procedure, we recommend fitting a rubber band or a nylon cable tie around the battery holder. This will prevent the batteries from coming loose when doing jumps, etc.

- ❑ Install 4 'AA' Alkaline batteries into the battery holder, double-checking to make sure that the polarity (+/-) is correct.
- ❑ Reinstall the battery holder into the battery box and secure the battery box cover back into place, using the retaining clip.

IMPORTANT: Make sure that the batteries are pushed firmly into place. They should not be loose. If for any reason the plug from the battery holder (male plug) is not plugged into the switch (female plug), plug them together now, making sure that the polarity is correct. For safety, the plugs can fit together only one way.

UPGRADE TIP

Upgrading your transmitter and receiver to use rechargeable NiCD or NiMH batteries is easy and recommended. You will need to purchase 8 'AA' rechargeable NiCD or NiMH batteries for the transmitter, a 5 cell 1200mAH (or higher capacity) NiMH battery pack for the receiver, and a compatible transmitter/receiver (Tx/Rx) charger.

For UK/Europe:

We recommend the Ripmax P-FBC10D/4 (UK) / P-FBC10D/4EUR (Europe), Tx/Rx NiCad/NiMH AC Charger 70/70mA.

For North America:

We recommend the Airtronics 95033Z 110V AC 75mA Dual Charger.

Charger for UK/Europe

Charger for North America

5-Cell NiMH Receiver Pack

Transmitter NiCDs/NiMHs

- ❑ Remove the four screws from the receiver mounting box cover, then remove the receiver mounting box cover itself.
- ❑ Uncoil the receiver antenna wire and feed it out through the hole in the aluminium antenna mount, then reinstall the receiver mounting box cover, making sure not to pinch any of the servo wires.

IMPORTANT: Verify that the steering and throttle servo leads are plugged into channel 1 and channel 2, respectively.

PRO TIP: If you have difficulty sliding the antenna wire through the antenna support tube in the next procedure, first pull the antenna wire through your fingers several times to straighten it, then lightly wet the antenna wire with glass cleaner. The glass cleaner will make the antenna wire slide through the support tube much easier.

- ❑ Slide the receiver antenna wire into one end of the antenna support tube and out the other end.
- ❑ Push the end of the antenna support tube firmly into the antenna mount (you may have to loosen the nut), then **gently** tighten the nut to lock the antenna support tube in place.

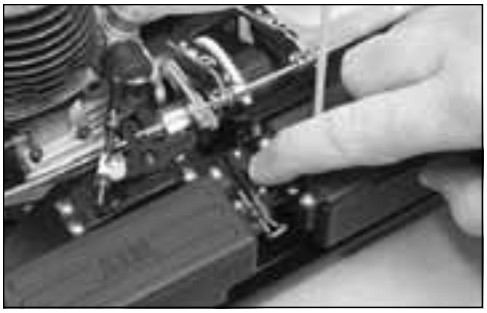
IMPORTANT: Leave the excess antenna wire hanging from the top of the antenna support tube. Under no circumstances should you cut the antenna wire shorter.

- ❑ Slide the transmitter's ON/OFF switch forward to turn the transmitter on. The red LED should glow brightly and the LCD screen display transmitter information.

IMPORTANT: If the red LED does not glow or if it blinks, check the batteries in the transmitter and replace them or recharge them (if using rechargeable NiCD or NiMH batteries). It's important that the batteries you are using (Alkaline or rechargeable) have sufficient power to operate the transmitter. Never attempt to recharge Alkaline batteries. **Doing so could cause them to explode!**

SAFETY TIP

Before driving your ***X***ST 4WD Truggy RTR, always turn on the transmitter first, followed by the receiver. After you're done driving your ***X***ST 4WD Truggy RTR, turn off the receiver first, then turn off the transmitter. This will prevent the possibility of a runaway model.



- ❑ Slide the receiver's ON/OFF switch to the 'ON' position to turn the receiver on. You should hear the servos move to their neutral positions.

STEP 2: RANGE CHECKING THE RADIO CONTROL SYSTEM

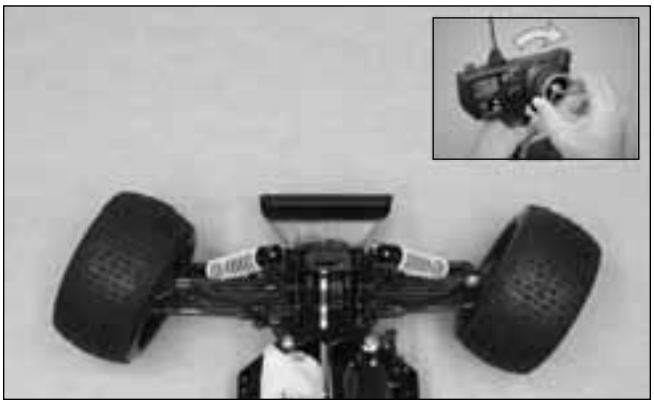
To ensure that the radio control system is operating properly and to prevent any chance of a runaway model, the radio control system should be range checked before the first run of the day and/or after a crash. To range check the radio control system, do the following:

- ❑ With the transmitter and receiver turned on, extend the transmitter antenna completely. With the ***X***ST 4WD Truggy RTR on the ground (without the engine running), walk away from it about 25 metres (75 feet). Move the steering wheel while looking at the ***X***ST 4WD Truggy RTR's front wheels. The wheels should pivot back and forth smoothly without any 'glitching' or interference.

IMPORTANT: If the radio system does not operate properly, please refer to the troubleshooting guide on page 24 before continuing further. Never attempt to operate your ***X***ST 4WD Truggy RTR if the radio control system is not functioning properly.

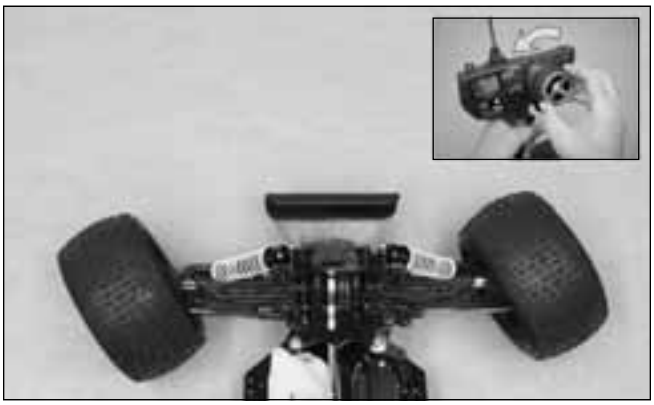
STEP 3: CHECKING THE STEERING AND THROTTLE/BRAKE CONTROLS

PRO TIP: We suggest doing the steering tests with the ***X***ST 4WD Truggy RTR's front wheels lifted off the ground. This will allow the steering system to operate smoothly, without any binding.



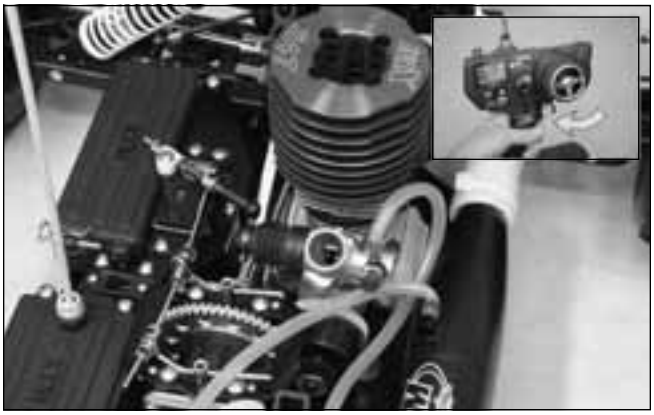
- ❑ With both the transmitter and the receiver turned on, rotate the transmitter's wheel forward (to the right). The ***X***ST 4WD Truggy RTR's front wheels should turn right.

IMPORTANT: If the wheels don't turn right, use the transmitter's servo reversing function to change the direction that the front wheels turn. Refer to the transmitter's User Guide for more information.



- ❑ Rotate the transmitter's wheel backward (to the left). The ***X***ST 4WD Truggy RTR's front wheels should turn left.
- ❑ Now, let go of the transmitter wheel. The ***X***ST 4WD Truggy RTR's wheels should return to centre.

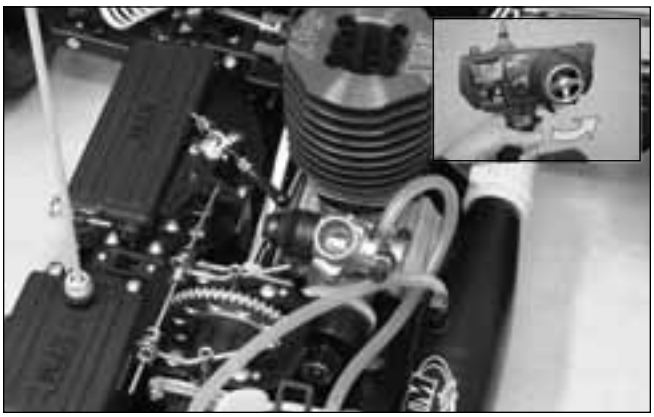
IMPORTANT: If the wheels do not point straight ahead (centre) after you return the transmitter wheel to centre, use the transmitter's trim function to adjust the wheels so that they point straight ahead. Refer to the transmitter's User Guide for more information.



- ❑ Pull back on the throttle trigger. The carburettor barrel should open completely and the brakes should be disengaged (i.e., the ***X***ST 4WD Truggy RTR should roll forward smoothly when pushed).
- ❑ Let go of the throttle trigger and the carburettor barrel should return to its idle position - open about 1mm / 1/16". The brakes should still be disengaged, too. If the brakes are not disengaged when the throttle is at the idle position, see page 19 "Adjusting the Brake Linkage".

IMPORTANT: If the carburettor barrel does not open when you pull back on the throttle trigger, use the transmitter's servo reversing function to change the direction. Refer to the transmitter's User Guide for more information.

PRO TIP: If the carburettor barrel does not open completely, use the transmitter's trim function to adjust the throttle until the carburettor barrel opens completely when you pull back fully on the throttle trigger. Refer to the transmitter's User Guide for more information.



- ❑ Push the throttle trigger forward. The carburettor barrel should stay in the idle position (open about 1mm / 1/16") and the brake linkage should move forward and engage the brakes (i.e., the ***X***ST 4WD Truggy RTR will not be able to roll at all when pushed).
- ❑ Let go of the throttle trigger and the brakes should disengage.

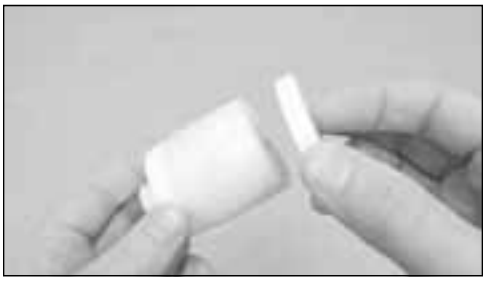
IMPORTANT: If you need to adjust the brake linkage, see page 19 "Adjusting the Brake Linkage".

UPGRADE TIP

To prevent your ***X***ST 4WD Truggy RTR from going out of control should the radio control system encounter signal loss, we strongly suggest using an electronic failsafe. The electronic failsafe is connected between the throttle/brake servo and the receiver. The failsafe is designed to electronically bring the throttle to idle and apply a preset amount of braking force should the radio control system lose its signal. This will prevent the ***X***ST 4WD Truggy RTR from driving out of control and causing damage/injury.

A failsafe will not will not work if the radio control system loses its signal due to battery failure (i.e., loss of battery capacity or the battery coming unplugged) or throttle servo failure.

STEP 4: INSTALLING THE AIR FILTER



❑ Remove the foam air filter element from the plastic bag and push it onto the air filter base. Secure the top of the air filter in place, using the screw provided.

IMPORTANT: The foam air filter element comes pre-oiled with air filter oil. See the information below on how to clean and reoil the foam air filter element when it gets dirty.

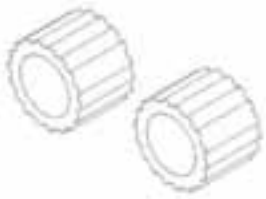
❑ Slip the **short end** of the silicone elbow onto the base of the air filter and secure it in place, using one nylon cable tie; then, slip the **long end** of the air filter assembly over the base of the carburettor and secure it in place, using a second nylon cable tie.

IMPORTANT: The short end of the silicone elbow is attached to the air filter and the long end is attached to the carburettor, otherwise it could foul the spur gear.

- To clean the air filter, remove the air filter element and wash it thoroughly in warm water and a small amount of liquid detergent. After it's clean, allow it to dry, then reoil it and install it back onto the air filter housing. To wet the air filter element, simply squeeze an ample amount of air filter oil onto the air filter element and work it through the air filter element, using your fingers. Use enough oil to completely saturate the air filter element. The entire air filter element should be oiled, but not so much that excess oil is dripping from it.

UPGRADE TIP

If you'll be running your ***X***ST 4WD Truggy RTR in dusty or wet conditions, we suggest using a prefilter sleeve over the air filter. Wet the main air filter element, then simply slide the prefilter sleeve over the air filter. It's not necessary, nor desirable, to oil the prefilter sleeve. We suggest using XTM Racing 1/8th Scale Prefilter Sleeves (P/N 149412).



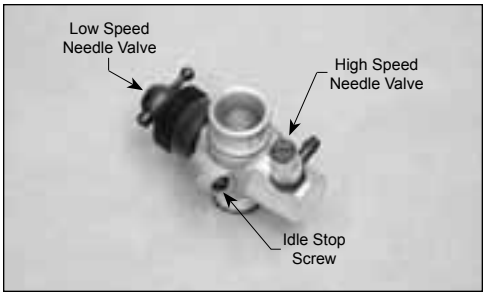
PRO TIP: Place the cleaned air filter element in a plastic bag and then apply the air filter oil on it. Close the plastic bag and work the oil into the air filter element. This allows you to work the oil into the element without getting excess oil on your hands.

Under no circumstances should you operate the engine without the air filter installed on the carburettor. The air filter prevents dust and debris from entering the engine and damaging it. If you operate your engine at any time without the air filter installed, the engine will be quickly damaged and require replacement of the piston and sleeve (liner).

BECOMING FAMILIAR WITH THE XTM RACING 24.7 NITRO ENGINE

WARNING!! PLEASE READ THIS INFORMATION BEFORE PROCEEDING!!

Your ***X***ST 4WD Truggy RTR comes equipped with the user-friendly and powerful XTM Racing 24.7 nitro engine. Before starting the engine for the first time, you **MUST** read this section and the next two sections very carefully. This section details the different parts of the engine's carburettor and how to adjust the carburettor's needle valves to tune the engine. The remaining two sections detail fueling and starting the engine, then breaking in the engine. **Failure to read this information may result in your not knowing how to properly operate your new engine, which can result in poor engine performance and even damage to the engine itself.**

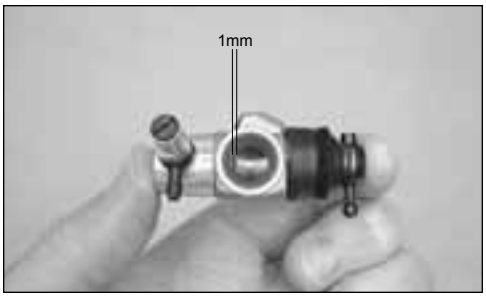


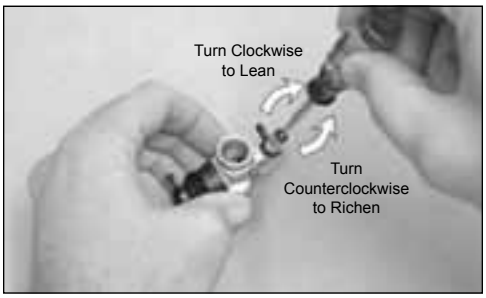
CARBURETTOR FAMILIARISATION

Refer to the photo at left to familiarise yourself with your engine's carburettor. All of the carburettor settings come preset from the factory for initial starting and break-in, but you should have a small flat blade screwdriver handy to make adjustments to the carburettor during the break-in process, which will be detailed later.

IDLE STOP SCREW

The idle stop screw adjusts the closure of the carburettor barrel. The idle stop screw should be adjusted so that the carburettor barrel stays open about 1mm / 1/16". Turning the idle stop screw clockwise will cause the carburettor barrel to stay open more. Turning the idle stop screw counterclockwise will allow the carburettor barrel to close more. If the carburettor barrel stays open too far, the engine will idle very high and the clutch will never disengage. This will wear out the clutch very quickly. If the idle stop screw is closed too far, the engine may die during idle or when you engage the brakes. Ideally, the engine should idle smoothly, yet slow enough so that the clutch stays disengaged.





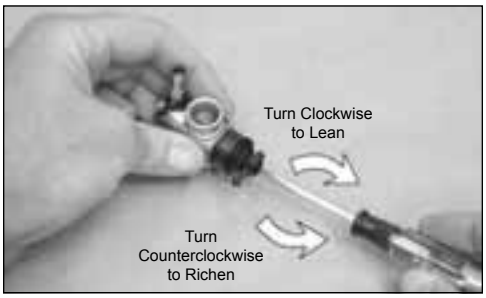
HIGH SPEED NEEDLE VALVE

The high speed needle valve is preset from the factory for the initial starting procedure. **Do not make adjustments to it at this time.** The high speed needle valve is used to meter the air/fuel mixture at full throttle. Turn the needle valve clockwise to lean the mixture or turn the needle valve counterclockwise to richen the mixture.

Check to ensure that the high speed needle valve is set at 3 full turns out from the fully closed position for the break-in process.

LOW SPEED NEEDLE VALVE

The low speed needle valve is preset from the factory for the initial starting procedure. Do not make adjustments to it at this time. The low speed needle valve meters the air/fuel mixture at idle and during transition from idle to full throttle. Turn the needle valve clockwise to lean the mixture. Turn the needle valve counterclockwise to richen the mixture. The low speed needle valve is preset from the factory, but minor adjustments may need to be made to suit your application: fuel used, glow plug and environment all contribute to the setting. **DO NOT ADJUST THE LOW SPEED NEEDLE VALVE UNTIL AFTER THE ENGINE HAS BEEN BROKEN IN.**



RESETTING THE HIGH AND LOW SPEED NEEDLE VALVES TO THE FACTORY SETTINGS

There may come a time when you get the needle valve settings out of spec, resulting in poor engine performance or not even being able to start the engine at all. If this occurs, reset both the high and low speed needle valves to their factory settings as described below:

RESETTING THE HIGH SPEED NEEDLE VALVE

- Gently turn the high speed needle valve clockwise until it bottoms out (fully closed). **Do not force it or you may damage the carburettor**.
- Turn the high speed needle valve counterclockwise (open) **3 full turns**.

RESETTING THE LOW SPEED NEEDLE VALVE

- Open the carburettor barrel completely.
- While holding the carburettor barrel open with your fingers, use a flat blade screwdriver to gently turn the low speed needle valve clockwise until it bottoms out (fully closed). **Do not force it or you may damage the carburettor**.
- From this point, turn the low speed needle valve counterclockwise (open) **3 full turns**.

IMPORTANT: The factory settings listed above are for break-in. Once the engine is broken in, the needle valve settings will be different, although these settings are good for getting your engine running again. Please be aware that you will need to retune your engine for proper performance.

FUELING AND STARTING THE XTM RACING 24.7 NITRO ENGINE

WARNING!! PLEASE READ THIS INFORMATION BEFORE STARTING YOUR ENGINE FOR THE FIRST TIME!!

If at any time the pull-starter becomes very tight or difficult to pull - **STOP!** The engine has become flooded and the excess fuel **must be removed from the engine** or damage to the pull-starter and/or engine could occur. To remove the excess fuel from the engine follow the procedures listed below:

- Completely close the high speed needle valve (turn clockwise) until it bottoms out. **Do this gently. Don't force it!**
- Remove the glow plug and its washer from the cylinder head.
- With a rag over the top of the engine, pull the pull-starter cord several times to expel the excess fuel from the engine.
- Check to make sure that the glow plug has not been fouled, then reinstall it and its washer.
- Reset the high speed needle valve 3 full turns out from bottom (fully closed).

WARNING: Under no circumstances should you operate the engine without the air filter installed on the carburettor. The air filter prevents dust and debris from entering the engine and damaging it. **If you operate your engine at any time without the air filter installed, the engine will be quickly damaged and require replacement of the piston and sleeve (liner).**

❑ Lift the fuel tank lid and carefully fill the fuel tank until the fuel level is just below the top of the fuel tank.

WARNING: Use fuel that is appropriate for nitro car engines. **Do not use gasoline/petrol or diesel fuel! For the break-in period you should use fuel specifically designed for R/C nitro car engines that contains no more than 20% nitromethane.**

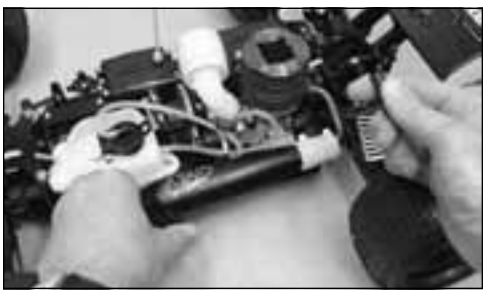
❑ Using your glow plug wrench, verify that the glow plug and its washer are installed in the cylinder head and tight. If they're not already preinstalled, install them now.

IMPORTANT TIPS ABOUT GLOW PLUGS

An XTM Racing # 4 'medium' heat-range glow plug is included with your engine. We suggest having a couple of extra glow plugs handy, because it can be expected that glow plugs will wear out quickly during the engine's break-in process. This glow plug will suit most users during the break-in process, although you may or may not need to change to a different type of glow plug after the break-in process is complete.

There are a variety of different heat range glow plugs to suit your engine. Typically, use a hotter glow plug if you're using 15% ~ 20% nitro fuel or are running in cooler ambient temperatures. Hotter glow plugs typically improve idle and transition, too. Use a cooler glow plug if you're running 25% ~ 30% nitro fuel or are running in higher ambient temperatures. **SEE TIP ON PAGE 16 ABOUT USING 30% NITRO FUEL.**

XTM Racing # 3 Glow Plug - Hot
SH Engines # 5 Glow Plug - Cold



❑ Prime the engine by first opening the throttle completely and covering the exhaust opening in the tuned pipe with your finger, then, pull the pull-starter cord several times until you see fuel just start to enter the carburettor through the fuel line.

IMPORTANT: Do not pull the pull-starter cord all the way out or damage to the pull-starter will occur. Use a couple of short pulls - about 18~20cm / 7~8" long.

❑ Remove your finger from the exhaust opening and close the throttle down to the idle position.

IMPORTANT: We recommend that you place the chassis on a dedicated car stand or similar so that all four wheels are suspended off the ground. This ensures that your ***X***ST 4WD Truggy RTR does not accidentally drive away when starting the engine if the idle setting is too high.

❑ While holding the ***X***ST 4WD Truggy RTR firmly with one hand (keeping your hand clear of any moving parts), carefully pull on the pull-starter cord 3 times, using short, quick pulls to check for a flooded condition.

IMPORTANT: If you can't turn the engine over using the pull-starter, don't force it. The engine is flooded. **See the warning and resolution at the top of this page.**

- ❑ Connect a fully charged glow starter to the top of the glow plug, making sure that the glow starter is locked firmly onto the top of the glow plug. You don't want it to fall off while you're trying to start the engine.

NEW ENGINE STARTING TIP

When the engine is new, it can sometimes be difficult to turn over using the pull-starter. You may find you need to pull the pull-starter harder than you expect. A trick to help this is to loosen the glow plug slightly, start the engine, then remove the glow starter and retighten the glow plug. This effectively lessens the engine's compression, making it easier to turn over with the pull-starter.

- ❑ With the throttle still in the idle position, hold the ***X***ST 4WD Truggy RTR firmly with one hand and carefully pull on the pull-starter cord, using short, quick pulls, until the engine starts.
- ❑ Once the engine starts, release the pull-starter cord, allow the engine to run for about 10 seconds more, then remove the glow starter from the glow plug.

IMPORTANT: If the engine does not start after a dozen pulls, refer to the trouble-shooting guide on page 24.

WARNING ABOUT RUNNING YOUR ENGINE FOR THE FIRST TIME

Until you're actually ready to break in the engine, do not run the engine for more than a few minutes. If you run the engine longer without breaking in the engine properly, damage to the engine can occur. **Break-in will be done in the next section.**

- ❑ Once the engine is running, to stop the engine, carefully pinch the fuel line with your fingers until the engine stops. Make sure to pinch the fuel pick-up line and not the fuel pressure line. The fuel pick-up line is the one connected to the carburettor.

WARNING: Be careful not to touch any parts of the engine or the tuned pipe because they will be hot. Also be careful to avoid any moving parts.

PRO TIP: When you pinch the fuel line to stop the engine, you must pinch it hard and hold it. The engine will rev up quickly, then stop. We suggest holding the ***X***ST 4WD Truggy RTR firmly whilst doing this, so that it doesn't lurch out of your hands.

BREAKING IN AND FINE-TUNING THE XTM RACING 24.7 NITRO ENGINE

The XTM Racing 24.7 nitro engine is an ABN engine. The cylinder sleeve (liner) is tapered at the top, causing severe resistance when the piston moves through the top of the stroke. This is normal. When the engine heats up to operating temperature, this resistance will decrease and the proper clearance will be achieved. The break-in procedure will guide you through the steps necessary to properly break in your new engine. Please follow the steps closely.

FUEL RECOMMENDATION

For the break-in period you should use a fuel specifically designed for R/C car engines that contains no more than 20% nitromethane and 10~14% oil content. Once the engine has been adequately broken in (about 45 minutes of run-time) you can switch to an R/C car fuel containing up to, but no more than, 30% nitromethane and 10~14% oil content.

WARNING: We do not recommend using fuels designed for R/C airplane engine use. These fuels do not contain the proper amount of lubricants; therefore, they will cause the engine to overheat or run erratically and severe damage to the engine can result.

GLOW PLUG RECOMMENDATION

The glow plug can make a big difference in how your engine performs. We recommend using a 'medium' or 'hot' heat-range glow plug intended specifically for performance engines like the XTM Racing # 4 or the XTM Racing # 3 during the break-in process. After the break-in process you may want to use a different heat-range glow plug. Do not use glow plugs intended for four stroke airplane engines or glow plugs with an 'idle bar'. Using the wrong type of glow plug will cause the engine to run erratically and make it difficult to tune properly. The wrong type of glow plug could also damage the engine.

ENGINE BREAK-IN TIP

To make sure that you're not leaning out the engine too much and overheating it during the break-in process, we suggest using a temperature gun to monitor the engine's operating temperature.

During break-in, engine temperature should not exceed 132ºC (270ºF). The optimum engine operating temperature is 99~110ºC (210~230ºF). The minimum engine operating temperature is 82ºC (180ºF).

AIR FILTER

The air filter is a very important part of your engine. Failure to use the air filter will damage the engine in a very short period of time. Make sure that you wet the air filter element with air filter oil and use a prefilter sleeve if you are driving in dusty or wet conditions. **See page 11 for more information.**

Under no circumstances should you operate the engine without the air filter installed on the carburettor. The air filter prevents dust and debris from entering the engine and damaging it. If you operate your engine at any time without the air filter installed, the engine will be quickly damaged and require replacement of the piston and sleeve (liner).

STEP 1: BREAKING IN THE ENGINE USING THE HEAT CYCLING METHOD

WARNING: Do not adjust the low speed needle valve until after the engine has been broken in. You can begin to adjust the low speed needle valve after you have broken in the engine and after you have read and understood **Step 2: Fine Tuning the Engine** on the next page. The high speed needle valve is preset from the factory for easy starting in most conditions for the break-in period.

ENGINE BREAK-IN TIP

Break in the engine by running the ***X***ST 4WD Truggy RTR on a flat surface (car park/parking lot, etc.) without the body shell fitted. It's important that the engine receive adequate airflow during the break-in process, so as not to overheat.

- ❑ Follow the previous procedures to fill the fuel tank and start the engine.
- ❑ Once the engine starts, keep the glow starter attached to the glow plug and let the engine run for about 10 seconds without giving it throttle. This will allow the engine to warm up.
- ❑ After the engine has been running for about 10 seconds, remove the glow starter from the glow plug. Advance the throttle in short, quick bursts and drive the ***X***ST 4WD Truggy RTR for about 2~3 minutes. If the engine is running rich enough, you should notice smoke coming from the tuned pipe and the engine should sound like it's running very rough. Also, the ***X***ST 4WD Truggy RTR will barely be moving because the engine is running so rich that it won't produce much power. **This is what you want for now.** If smoke isn't coming from the tuned pipe, richen the high speed needle valve 1/4 of a turn (turn counterclockwise). After 2~3 minutes stop the engine by pinching the fuel line to the carburettor.
- ❑ Let the engine cool for approximately 10 minutes, then restart it. Set the high speed needle valve mixture to a slightly leaner setting, about 1/8 of a turn more in (turn clockwise). Repeat the procedure above, advancing the throttle in short, quick bursts and driving the ***X***ST 4WD Truggy RTR for about 2~3 minutes, then stop the engine again and let it cool for approximately 10 minutes.
- ❑ Repeat the procedure above, leaning the high speed needle valve about 1/8 of a turn more each time (turn clockwise). In all, you should run the engine a total of about 45 minutes. After 45 minutes of run-time the engine will be broken in. Run the engine with the high speed needle valve set slightly rich, but lean enough to power the ***X***ST 4WD Truggy RTR adequately. At this point the engine should hold a good setting on the high speed needle valve and you can begin to fine tune the needle valve settings to increase performance.

ENGINE BREAK-IN TIP

During the break-in process, it's normal for excess fuel oil and exhaust residue to drip from the tuned pipe.

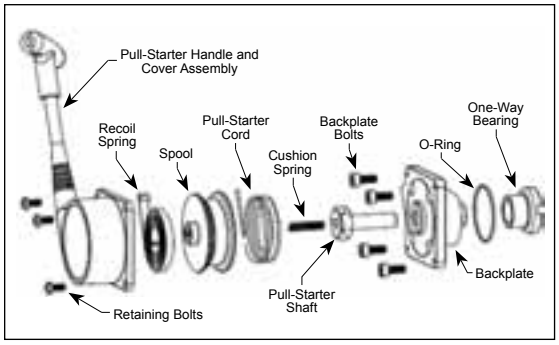
ENGINE TUNING TIP

No two engines will have the exact same needle valve settings once broken in. Different fuels used, different types and heat-ranges of glow plugs, the outside air temperature and air pressure all affect the engine. The factory needle valve settings on page 12 are break-in settings. If you reset the needle valves to the factory settings, the engine will run very rich and you will need to retune the engine.

IMPORTANT: It is of the utmost importance that the engine never be leaned out too much. When running the engine, you should always be able to see a slight trail of smoke coming from the tuned pipe. If you can't, stop the engine immediately and richen the high speed needle valve (turn counterclockwise). You should also make sure there is plenty of air flowing over the cylinder head to keep the engine from overheating.

ENGINE BREAK-IN TIP - WHY IS MY PULL-STARTER SLIPPING?

If, during the break-in process, the pull-starter slips when you try to start the engine, the one-way bearing and pull-starter shaft may be coated with excess fuel oil. This can occur because the excess oil in the engine during the break-in process gets into the one-way bearing. To fix this, carefully remove the one-way bearing and the pull-starter shaft, clean them with rubbing alcohol and reassemble the parts. Use the exploded parts view to see how the parts are assembled. Also, be careful when removing the pull-starter assembly to ensure that the recoil spring does not uncoil and fly out. After removing the screws securing the pull-starter, carefully insert a flat blade screwdriver between the engine backplate and the pull-starter. Apply slight pressure against the pull-starter to help prevent the recoil spring from uncoiling. Temporarily secure the pull-starter with a rubber band or tape while cleaning the one-way parts and be very careful when reassembling the unit. **The use of eye protection during this procedure is strongly recommended.**



STEP 2: FINE TUNING THE ENGINE

After your engine has been broken in, you can set the high and low speed needle valves for optimum engine performance.

WARNING ABOUT TUNING YOUR ENGINE

Be careful to never lean out the engine too much. Remember that the lubricants for your engine are suspended in the fuel. If you lean out the fuel mixture too much you will also be lowering the amount of lubricant entering your engine. Less lubricant means more chance of your engine overheating and possible engine failure.

SETTING THE HIGH SPEED NEEDLE VALVE

- ❑ Start the engine and remove the glow starter from the glow plug, then allow the engine to warm up for about 10 seconds.
- ❑ After the engine has warmed up, drive the ***X***ST 4WD Truggy RTR as you normally would. If the engine seems to be running rich (i.e., not reaching maximum power), lean the high speed needle valve about 1/16 of a turn (turn clockwise) at a time until the desired setting is achieved. **Use a temperature gun to ensure that the engine is within the suggested temperature range 99~110ºC (210~230ºF) and always make sure that you run the engine slightly rich - you want to be able to see a faint exhaust trail at all times.**

SETTING THE LOW SPEED NEEDLE VALVE

- ❑ Start the engine and lean out the high speed needle valve as per the procedures above. Close the throttle until the engine slows down enough so that the clutch is disengaged and the wheels don't turn when the ***X***ST 4WD Truggy RTR is lifted from the ground. Allow the engine to idle for about 10~15 seconds.
- ❑ While holding the ***X***ST 4WD Truggy RTR off the ground (making sure to keep your fingers away from any moving parts), quickly open the throttle in a short burst. If the engine just stops running as soon as the throttle is advanced, the low speed needle valve is too lean and the engine is not getting enough fuel. With the engine stopped, richen the low speed needle valve about 1/16 of a turn (turn counterclockwise).
- ❑ Restart the engine and repeat the procedure above until the engine will transition smoothly and quickly. Very slight hesitation in the transition is normal.
- ❑ If you quickly advance the throttle and the engine seems to be very rich during transition (i.e., lots of smoke coming from the tuned pipe and very rough sounding), the low speed needle valve is too rich and the engine is getting too much fuel. With the engine stopped, lean the low speed needle valve about 1/16 of a turn (turn clockwise).
- ❑ Restart the engine and repeat the procedure above until the engine will transition smoothly and quickly. Very slight hesitation in the transition is normal.
- ❑ Now drive the ***X***ST 4WD Truggy RTR as you normally would for a while to get a feel for how the engine reacts to throttle. Now that you

PLEASE READ IF USING 30% NITRO FUEL

To get more power from your engine you can use fuel containing up to 30% nitromethane. We must caution you, though, that once you run the engine with increased nitro you may not get satisfactory results if you decide to go back to a lower nitro content. Also, if you use fuel containing 30% nitro, we suggest adding a .10mm head gasket to lower the compression ratio. If you don't lower the compression ratio, overheating and erratic running will likely occur. You may also find it necessary to run a 'cold' heat-range glow plug to ensure satisfactory results.

BASIC ENGINE MAINTENANCE

To keep your engine operating at peak performance there are some basic maintenance procedures that need to be performed on your engine on a regular basis:

- After you are finished running the engine for the day, pinch the fuel line to stop the engine. This will allow the engine to burn any excess fuel out of the crankcase.
- Remove the air filter element and wash it thoroughly in warm water and a small amount of liquid detergent. After it's clean, allow it to dry, then reoil it and install it back into the air filter housing.
- Remove the glow plug and its washer from the engine and squirt several drops of high-quality after-run oil into the glow plug hole and the carburettor opening. Pull the pull-starter cord several times to distribute the oil throughout the engine, then reinstall the glow plug and its washer. The after-run oil will prevent the inside of the engine (especially the crankshaft bearings) from rusting.

ENGINE TIP

Loop four nylon cable ties around the corners of the engine's cylinder head, making sure that the ratchet portion of the cable ties are up toward you. When your ***X***ST 4WD Truggy RTR flips over, the cable ties will help prevent the cylinder head from being scratched.

- Clean the outside of the engine using a stiff brush and nitro car cleaner, then dry the engine, using a rag or compressed air.
- Periodically check the condition of the clutch for wear.
- Periodically oil the clutch bell bearings.
- Check the engine's cylinder head bolts and backplate bolts after each day of use to ensure that they're tight. This will prevent air leaks from causing erratic engine performance.

INSTALLING THE BODY SHELL

STEP 1: APPLYING THE DECALS

❑ For your convenience, some of the decals have already been applied to the body shell. To apply the remaining decals to the body shell, simply remove them from the protective backing sheet and apply them to the body shell as you like.

STEP 2: INSTALLING THE BODY

❑ Fit the body shell onto the chassis, using the body clips provided.

❑ Fit the wing to the wing mount, using the long body clip provided.

❑ Double-check that the body shell does not interfere with the wheels, the suspension, the engine's cylinder head or the tuned pipe. If it does, you will need to trim the body shell slightly to fit around those areas.

PRO TIP: Other than during the break-in period, always make sure that you fit the body shell when driving your ***X***ST 4WD Truggy RTR. When your ***X***ST 4WD Truggy RTR flips over, the body shell will help protect the chassis and its components.

CHASSIS TUNING GUIDE

Chassis alignment and geometry are important if you want your ***X***ST 4WD Truggy RTR to perform well. A good performing truck means a truck that is easier to drive, too. Follow our guidelines in this section to get the most out of your ***X***ST 4WD Truggy RTR.

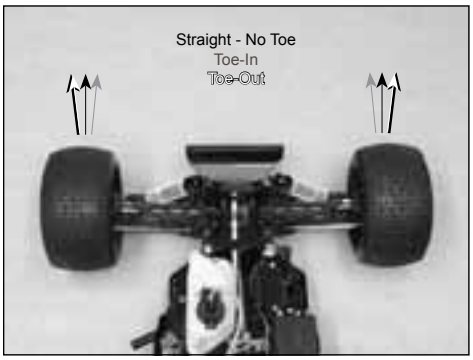
IMPORTANT: It's very important when making changes to the settings of your ***X***ST 4WD Truggy RTR that you make the settings the same for each side. For example, if you change the spring tension on the right front shock, you should change the spring tension on the left front shock the same amount, etc.

Do not make any changes that are more than 3 degrees from the initial settings or the handling characteristics of your ***X***ST 4WD Truggy RTR will become very poor.

ADJUSTING THE TOE ANGLE

The toe angle is the angle of both front tyres (or rear tyres) to each other, when viewed from above. Toe-in is when the front of both tyres point toward each other and toe-out is when the front of both tyres point away from each other.

- For the front tyres, toe-in will make the ***X***ST 4WD Truggy RTR track (run) straighter, but the steering will be more sensitive. Toe-out will desensitise the steering, making the ***X***ST 4WD Truggy RTR a little more driver-friendly.
- For the rear tyres, if you're running on a smooth surface, we suggest no toe-in. If you are running on a rough surface, we suggest about 1~2 degrees of toe-in. This will give the rear end a little more 'bite' (traction).



RECOMMENDED INITIAL SETTINGS

- 0 degrees toe-in on the front and 2 degrees on the rear for overall best 4WD driveability on most surfaces. **2 degrees toe-in on the rear is stock.**

☞ Adding more than 3 degrees of toe-in or toe-out on the front will result in excessive loss of speed and erratic handling. Toe adjustments should be measured with the ***X***ST 4WD Truggy RTR at its normal ride height.

PRO TIP: For more precise toe angle adjustments, use a dedicated toe angle adjustment gauge, available at most hobby retailers.

❑ To adjust the toe-angle of the front tyres, turn the tie-rods (steel rods connecting each wheel to the steering arm) in or out with the adjustable wrench provided.

❑ To adjust the toe-in on the rear tyres, use one of the different suspension holders provided to set the desired toe angle, as described in the procedures below. For convenience, the degree of toe angle is moulded into the back of each suspension holder.

❑ Remove the two 4x16mm F/H TP screws from the bottom of the chassis that hold the suspension holder support in place, then remove the suspension holder support from the chassis.

❑ Remove the two 4x12mm TP screws that hold the suspension holder in place, then carefully pull out the suspension holder, being careful not to pull out the hinge pins.

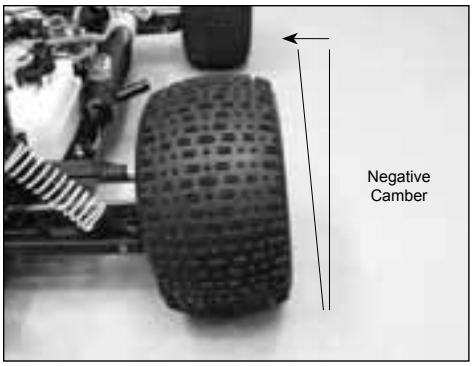
❑ Install the desired suspension holder. Installation is the reverse of the disassembly procedure.

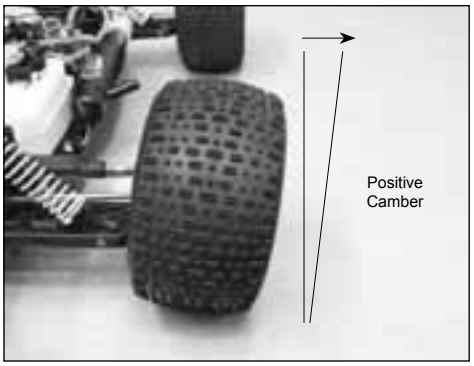
ADJUSTING THE CAMBER ANGLE

Camber is referred to as the amount of the tyre's surface that contacts the ground. Tyres that are exactly perpendicular to the ground have 0 degrees of camber. If the top of the tyre leans in toward the chassis, the tyre has negative camber. If the top of the tyre leans out away from the chassis, the tyre has positive camber.

RECOMMENDED INITIAL SETTINGS

- For driving on smooth surfaces set both the front and back tyres at 0 degrees.
- For driving on rough surfaces set the front tyres at -1 degree and the back tyres at -2 degrees.





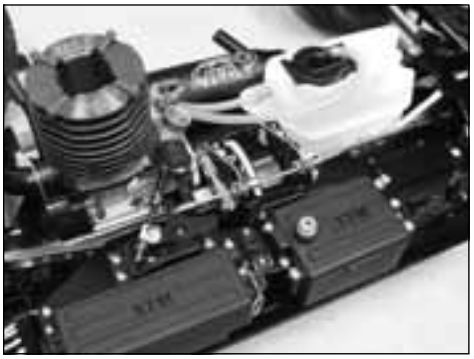
☞ Camber settings should be measured with the ***X***ST 4WD Truggy RTR at its normal ride height.

PRO TIP: For more precise camber adjustments, use a dedicated camber gauge, available at most hobby retailers.

❑ Adjust the camber angle of the tyres by turning the upper turnbuckles in or out using the adjustable wrench provided.

ADJUSTING THE BRAKE LINKAGE

With both the transmitter and the receiver turned on, and the throttle trim and the servo arm centred, the ***X***ST 4WD Truggy RTR should roll forward smoothly when pushed (i.e., the brakes should be disengaged). If the brakes are dragging when the throttle trigger is at neutral, the brake discs will wear out very quickly. To ensure that the brakes are disengaged, always make sure that there is a 1mm / 1/16" wide gap between the two rear collars and the two brake levers. Both collars should be adjusted so that they are equal distance behind each of the two brake levers. This will ensure that both brake levers engage equally during braking.



RECOMMENDED INITIAL SETTINGS

- We suggest initially leaving the brake linkage collars in the factory positions, then readjust them after driving your ***X***ST 4WD Truggy RTR a couple of times.

❑ To make adjustments to the brake linkage, simply loosen the grub screw in the collars behind the brake levers and reposition them, then retighten the grub screws.
Moving the collars forward, toward the brake levers, will result in the brakes coming on sooner and more forcefully.

ADJUSTING THE BRAKE BIAS

Since the front and rear brakes can be adjusted independently of each other, you may not want both front and rear brakes to engage at the same time. If you want the rear brakes to engage just before the front brakes, move the collar at the front brake lever just a fraction further back from neutral. This will result in the rear brakes engaging just before the front brakes. If you want the front brakes to engage just before the rear brakes, move the collar at the rear brake lever just a fraction further back from neutral. This will result in the front brakes engaging just before the rear brakes. Experimentation will be necessary to achieve the desired braking response, dependant on your track conditions and driving style.

ADJUSTING THE SHOCK SPRING TENSION

By adjusting the spring tension of the shocks, you can increase steering sensitivity, adjust the ride-height of the ***X***ST 4WD Truggy RTR and fine-tune the damping quality of the suspension system. How you drive your ***X***ST 4WD Truggy RTR will dictate what settings you should be using. As an example, if you're driving your ***X***ST 4WD Truggy RTR off-road and going over lots of jumps, you may want to increase the spring tension of the front shocks to help prevent the front of the ***X***ST 4WD Truggy RTR from bottoming out. If you're racing your ***X***ST 4WD Truggy RTR, local track conditions will dictate the settings to use.

RECOMMENDED INITIAL SETTINGS

- We recommend initially leaving all of the adjustment rings at their factory settings.

❑ Increase or decrease spring tension by threading the adjustment ring up or down the shock body. Threading the ring down increases spring tension and the chassis's ride height, and will stiffen the overall damping characteristics of the suspension. Threading the ring up decreases spring tension and makes the damping characteristics of the suspension softer.

☞ When adjusting the spring tension, make sure to adjust the right and left shocks equally.

CHANGING THE SHOCK SPRINGS

Shock springs are easy to change and can make a difference in the way your ***X***ST 4WD Truggy RTR handles relative to the type of terrain you're driving on. If you drive your ***X***ST 4WD Truggy RTR off-road, in a smooth, high-traction area, use stiffer springs to reduce body roll and weight shift. If the area where you drive your ***X***ST 4WD Truggy RTR is very bumpy, you might consider using softer springs to help absorb the bumps. If the area is bumpy and you use harder springs, the ***X***ST 4WD Truggy RTR will have a tendency to jump and hop around. The shock springs included with the ***X***ST 4WD Truggy RTR are suitable for most general off-road applications.

FRONT and REAR

SOFT	P/N 149370	80.5mm	1.4mm Shock Spring (BLUE)
	P/N 149366	80.5mm	1.5mm Shock Spring (WHITE)
	P/N 149363	80.5mm	**1.6mm Shock Spring (YELLOW) - STOCK**
STIFF	P/N 149364	80.5mm	1.7mm Shock Spring (BLACK)

ADJUSTING THE SHOCK DAMPING

Changing the shock oil (the oil inside the shocks) will change the damping characteristics of the shocks. Typically, if you are running on smooth surfaces, use a heavier weight oil. If you are running on rough surfaces, use a lighter weight oil.

 # 400 (40 weight) shock oil is stock. This is good for all-around use. For racing, you may want to consider using # 250~# 500 (25~50 weight) shock oil.

IMPORTANT: Use only 100% silicone oil in the shocks. **Do not use motor oil.**

RECOMMENDED INITIAL SETTINGS

- We recommend using the # 400 shock oil that the shocks are already filled with.

❑ Remove the shock, then carefully unscrew the shock cap. Pull the shock piston down completely, then empty the shock oil from the shock. Fill the shock body with shock oil until the oil level is just below the top of the shock body, then, **gently** pump the shock piston up and down to dissipate any air bubbles from the shock oil. Top off the shock oil level if necessary, before reinstalling the shock cap and diaphragm.

ADJUSTING THE BUMP STEER

The front upper hinge pins can be moved up or down to adjust bump steer. Generally, if you move the hinge pins into a lower position, this will increase bump steer, which can be helpful on tight tracks. For a larger track, you may want to move the hinge pins to a higher position to decrease bump steer.

RECOMMENDED INITIAL SETTINGS

- We recommend initially leaving the front upper hinge pins in the factory locations.

❑ Adjust bump steer by removing the upper hinge pins and reinstalling them, along with the upper suspension arms, in a hole either further up or lower down in the upper suspension plate.

IMPORTANT: When tightening the hex nuts on the back of the hinge pins, be careful not to overtighten them or the suspension arms may not pivot freely. When adjusting the hinge pin positions, make sure to adjust the right and left sides equally.

ADJUSTING THE SHOCK MOUNTING POSITIONS

The ***X***ST 4WD Truggy RTR shock towers feature a number of different mounting positions for the shocks. By changing the location of the upper shock mounts you can make the shock feel stiffer or softer as the ***X***ST 4WD Truggy RTR rolls from side-to-side. In general, moving the shocks toward the outside will make the shock stiffer and moving the shock toward the inside will make the shock softer.

You will need to experiment with these settings to find something that suits both your track and driving style. A good starting point is to adjust the rear shocks. Moving the rear shocks toward the outside will give more 'bite' (traction) in the turns; however, depending on how you drive, you might want to move the shocks toward the middle. This will give a more 'plush' suspension.

RECOMMENDED INITIAL SETTINGS

- We recommend initially leaving the shock mounting positions in their factory locations.

❑ Change the shock mounting positions by first removing the top of the shock from the shock mount, then by removing the shock mount from the shock tower. Reinstall the shock mount, then the top of the shock into the desired position on the shock tower. Make sure to adjust the right and left sides equally.

ADJUSTING THE DIFFERENTIALS

The ***X***ST 4WD Truggy RTR features front, centre and rear bevel gear differentials that each feature O-Ring seals and cup-style housings. All three differentials are packed with differential grease that is good for most driving conditions. You can make fine-tuned adjustments to each differential by removing them from the chassis, opening them up and replacing the grease with different weights of silicone oil.

- **Front andRear Differentials:** Adding heavier silicone oil will tighten the differentials and adding lighter silicone oil will loosen the differentials. If your ***X***ST 4WD Truggy RTR feels loose (uncontrollable) during turns, you can tighten the front differential or loosen the rear differential. If your ***X***ST 4WD Truggy RTR is pushing (understeers) during turns, you can loosen the front differential or tighten the rear differential.
- **Centre Differential:** For the centre differential, using a lighter weight oil will cause the differential to unload easier. Generally, this is good for loose tracks with little traction. Using a heavier weight oil will provide a more even amount of power to the front and rear. On loose tracks, this can cause the ***X***ST 4WD Truggy RTR to be too 'squirrely' (uncontrollable) or cause the rear end to slide out. For this reason, we only suggest using heavier oil if you're driving on a high-traction surface.

For racing and general use, we recommend using XTM Racing # 3000 oil (P/N 146712) in the front, # 5000 oil (P/N 146714) in the centre and # 1000 oil (P/N 146710) in the rear. This is a good starting point for most driving conditions.

For your convenience, we show you how to remove and disassemble the front differential. Removing and disassembling the centre and rear differential is similar. **Please refer to the differential assembly drawing on page 26 for a detailed break-down of the differential assembly.**

❑ Remove the four 4x18mm F/H TP screws from the bottom of the chassis that hold the front bumper and the gearbox in place.

❑ Remove the upper hinge pins, then remove the two 3x38mm TP screws that hold the upper suspension plate in place. Remove the upper and lower suspension plates.

❑ Pull the front half of the differential case straight out, then remove the hinge pins, drop the lower suspension arms and pull the differential assembly straight out.

❑ Remove the four 2x10mm TP screws that hold the differential housing together. Pull the differential housing apart, then pull the differential assembly out of the differential housing.

❑ You can now disassemble the differential, clean away all of the grease, then reassemble and refill the differential with the silicone oil of your choice.
Refer to the steps below to assemble the differential.

❑ Push one ball bearing onto the differential cup.

❑ Push the output joint into the differential cup, then push one small pin into the hole in the output joint, making sure that the pin is centred. Install the pin through the hole in the side of the differential cup **(A)**.

❑ Install one large bevel gear into the differential cup, making sure that the slot in the back of the bevel gear fits over the pin in the output joint.

❑ Install two small bevel gears onto each pin, then install the small bevel gear assemblies into the differential cup, making sure that the flat spots in the pins cross over each other and that the ends of the pins fit in the slots in the side of the differential cup **(B)**.

❑ Install one grub screw into the side of the differential cup, then fill the differential cup full with differential oil. Let the differential 'rest' until the air bubbles are gone.

❑ Press a second large bevel gear into the differential cup, making sure that the gears mesh with each other, then carefully place a gasket onto the differential cup **(C)**.

❑ Reinstall the ring gear (or centre spur gear) onto the differential cup, making sure to tighten the screws firmly **(D)**.

ADJUSTING THE GEARING AND TYRES

The ***X***ST 4WD Truggy RTR features a 13T stock clutch bell and tyres that will both work well on a decent size track. If you're racing your ***X***ST 4WD Truggy RTR, you will probably want to experiment with different tyres and clutch bells. In general, using a smaller clutch bell will result in quicker acceleration, but slower top speed and using a larger clutch bell will result in faster top speed, but slower acceleration. In addition, if you use smaller diameter tyres, there will be less rotating mass and the engine will spool up faster. This means that you'll have better off-the-line power, but at a price - you'll lose top-end speed because of the smaller diameter tyres. To compensate for this, you might want to use a 14T clutch bell.

On smaller, tight tracks, you might want to use smaller diameter tyres for quicker acceleration and keep the 13T clutch bell if top-end speed will not be an issue. It's all a matter of experimenting with different combinations to find the one that best suits your track and driving style.

ADJUSTING THE REAR SQUAT

Rear squat can be adjusted using the rear suspension holder. Installing the rear suspension holder upside down causes the rear end to develop some anti-squat. This, essentially, gives a little more forward 'bite' and better control in large sweeping turns or straightaways. In some instances, however, it will give you less control while in tighter turns. Deciding to run anti-squat will depend on your track. If you're running on a large track with large, sweeping turns or straightaways, install the rear suspension holder upside down to add anti-squat. If you're running on a tight track with little or no straightaways install the rear suspension holder right-side up to remove any anti-squat.

The rear suspension holder is installed upside down from the factory to add anti-squat.

ADJUSTING THE STEERING SENSITIVITY

You can adjust your ***X***ST 4WD Truggy RTR's steering sensitivity by tightening or loosening the servo saver spring. Tightening the servo saver spring will cause the steering to be more responsive, and loosening the servo saver spring will cause the steering to be less responsive.

RECOMMENDED INITIAL SETTINGS

- We recommend initially leaving the servo saver adjustment ring in the factory location.

❑ Adjust the servo saver spring by adjusting the servo saver adjustment ring up or down. Threading the adjustment ring up will tighten the servo saver spring and threading the adjustment ring down will loosen the servo saver spring.

WARNING: Tightening the servo saver spring increases the chance of damaging the steering servo during a crash. **Adjust only as necessary.**

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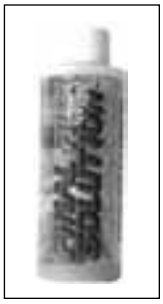
MAINTAINING YOUR *X*ST 4WD TRUGGY RTR

Following a simple maintenance schedule will ensure that your ***X***ST 4WD Truggy RTR operates in top condition every time you use it. It is strongly recommended.

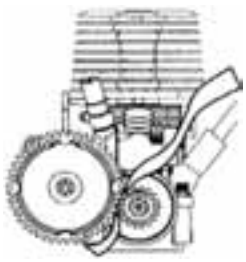
- Check the foam air filter element for dirt blockage. If the foam air filter element is dirty, remove it from the air filter housing and wash it in liquid soap and warm water. Dry the foam air filter element with a paper towel, reinstall it and 'wet' it with air filter oil.
- Check the chassis for any loose screws, especially the engine and the outdrive cup mounting screws. Tighten them if necessary.
- Any screws that are threaded directly into metal should be secured in place with threadlock. This will prevent the screws from loosening during use. Screws threaded into nylon or composite material do not require threadlock.

- Do not overtighten any screws that thread into nylon or composite material or the material may strip out. Screws threaded into nylon or composite material need only be tightened snugly.
- Check the steering linkage and the throttle/brake linkage for any signs of wear or misalignment. Tighten and/or readjust them as necessary. Double-check that the grub screws in the collars are tight and threadlocked.
- Once in a while, remove the wheels and clean the wheel bearings, using a bearing cleaner. This will remove any dust and grit that may, over time, damage the bearings. After cleaning the bearings, reoil them using a good quality bearing oil. Never run the bearings dry or damage to the bearings will result.
- When you clean the wheel bearings as described above, also remove, clean and reoil the clutch bell bearings.
- Check the fuel system, including the fuel tank and fuel tubing, for any signs of cracking, splitting or looseness. Replace any fuel tubing you suspect may be damaged.
- Check the condition of your transmitter and receiver batteries each time you drive your ***X***ST 4WD Truggy RTR. If you think they might need replacement or recharging, do so before driving your ***X***ST 4WD Truggy RTR again.
- After a period of time the chassis will accumulate a lot of dirt and debris, especially around the engine area. This buildup should be cleaned off using a high-powered spray cleaner like Emerald Nitro Car Cleaner. **Some nitro car cleaners will damage anodised and/or plated parts. Test on an inconspicuous area first.**

  - After cleaning the chassis and engine with Nitro Car Cleaner, you should oil the moving parts of the chassis. **Do not oil the clutch bell, spur gear, drive shafts (dog bones) or the brake discs.**



  - Always use new fuel and keep the cap on the fuel tightly closed. As fuel ages it absorbs water, which degrades the fuel's performance and will cause erratic engine operation.
  - After you have finished using your engine for the day, remove the glow plug and its washer from the engine and squirt several drops of high-quality after-run oil into the glow plug hole. Pull the pull-start cord several times to distribute the oil throughout the engine, then reinstall the glow plug and its washer. This will prevent corrosion inside your engine.
- Never leave unused fuel in the fuel tank for more than a couple of days. The nitromethane and methanol in the fuel will evaporate, leaving the oil behind. This will eventually turn into a thick sludge that will require replacement of the fuel tank to fix.
- If you need to remove the engine to clean it or change the clutch bell, etc., it's important that you set the gear mesh between the clutch bell and the spur gear properly when reinstalling the engine; otherwise, the spur gear may be damaged or the gears may bind. To set the gear mesh, first start by setting the engine mount assembly temporarily in place, then slide the engine back within the mounts until the teeth on the clutch bell are even with the spur gear. When satisfied with the alignment, tighten the four socket-cap screws to secure the engine to the engine mounts. Next, place a piece of notebook paper between the clutch bell and the spur gear, and push the engine toward the spur gear firmly, so that the notebook paper crinkles. When set properly, there should be very slight play between the gears. If the gears are too tight they will bind and if they are too loose they will strip out. When satisfied with the alignment, tighten the four hex screws on the bottom of the chassis. With the wheels off the ground, you should be able to spin the clutch bell with your finger. The clutch bell should rotate the spur gear and other drivetrain components rather easily. If it's difficult to rotate the clutch bell, your gear mesh is likely too tight. Readjust the gear mesh, making sure to use a piece of notebook paper between the gears. When set properly, the paper should be tightly crinkled, but not ripped or punctured.



TROUBLESHOOTING GUIDE

This troubleshooting guide has been provided to help you diagnose and solve most problems that you may encounter with your XTM Racing ***X***ST 4WD Truggy RTR, XTM Racing 24.7 Nitro Engine or Cirrus 3CFM radio control system.

If you cannot solve a problem using this troubleshooting guide, please contact your local distributor, using the Customer Service Information on page 3.

IF YOU'RE HAVING A PROBLEM WITH THE RADIO CONTROL SYSTEM

PROBLEM	CAUSE	SOLUTION
1) Radio system does not operate	A) Transmitter and/or receiver batteries are low B) Batteries are installed incorrectly C) Receiver battery connector is loose	A) Replace/recharge transmitter and/or receiver batteries B) Check that the polarity of the batteries is correct C) Check that receiver battery connector is plugged in and tight
2) Operating range is short	A) Transmitter antenna is retracted B) Receiver antenna is not extended C) Receiver antenna is cut D) Transmitter and/or receiver batteries are low	A) Extend transmitter antenna completely B) Extend receiver antenna completely C) Contact your local distributor for repair information D) Replace/recharge transmitter and/or receiver batteries
3) Servos do not operate normally	A) Transmitter and/or receiver batteries are low B) Servo gear stripped or otherwise damaged	A) Replace/recharge transmitter and/or receiver batteries B) Replace with new gear set
4) When engine is running, radio system operates erratically	A) Receiver crystal is loose B) Receiver battery connector is loose C) Damage to receiver after a crash	A) Remove and reinstall the receiver crystal B) Check that receiver battery connector is tight C) Contact your local distributor for repair information

IF YOU'RE HAVING A PROBLEM WITH THE XTM RACING 24.7 NITRO ENGINE

PROBLEM	CAUSE	SOLUTION
1) Engine does not start	A) Failed glow plug B) Glow Starter not charged and/or faulty C) Idle mixture screw set too lean D) Old or contaminated fuel E) Engine flooded with too much fuel F) Air leak in fuel system and/or engine	A) Replace glow plug with new one B) Fully charge glow starter and/or replace C) Reset idle mixture to factory setting (Pg12) D) Replace with new fuel E) Remove glow plug and expel fuel from cylinder (Pg13) F) Replace fuel lines and/or tighten all engine bolts
2) Engine does not draw fuel	A) Air leak in fuel system and/or engine B) High speed needle valve fully closed C) Idle mixture screw set too lean D) Fuel lines kinked E) Defective fuel tank	A) Replace fuel lines and/or tighten all engine bolts B) Reset high speed needle valve to factory setting (Pg12) C) Reset idle mixture to factory setting (Pg12) D) Check and straighten fuel lines E) Replace fuel tank
3) Engine does not transition	A) Failed and/or wrong type of glow plug B) Old and/or wrong type fuel C) High speed needle valve set too rich D) Idle mixture set too lean E) Idle mixture set too rich F) Air leak in fuel system and/or engine	A) Replace with new recommended glow plug (Pg4) B) Replace with new recommended fuel (Pg4) C) Reset high speed needle valve to leaner setting (Pg16) D) Set idle mixture richer (Pg16) E) Set idle mixture leaner (Pg16) F) Replace fuel lines and/or tighten all engine bolts
4) Engine overheats	A) Engine running too lean B) Body too restrictive C) Wrong type of fuel used D) Engine not fully broken in	A) Richen high speed needle valve (Pg16) B) Open larger vents in body to allow air to enter and exit C) Use fuel recommended only for R/C cars (Pg4) D) Allow engine further break-in time (Pg15)
5) Engine vibrates excessively	A) Engine and/or engine mounts loose	A) Tighten all engine and engine mounting bolts
6) Engine does not idle down	A) Idle stop screw out of adjustment B) Engine has developed an air leak C) One or more carburettor O-rings damaged D) High speed needle valve set too lean	A) Adjust idle stop screw to factory setting (Pg12) B) Check and tighten all engine screws C) Replace carburettor O-rings D) Richen high speed needle valve (Pg16)
7) Pull-Start Assembly Slips	A) One-way bearing coated with oil B) Fuel used has too much oil content C) One-way bearing shaft is worn	A) Clean one-way bearing using rubbing alcohol (Pg16) B) Change to fuel that with 10~14% oil content (Pg4) C) Replace one-way bearing shaft

IF YOU'RE HAVING A PROBLEM WITH THE CHASSIS

PROBLEM	CAUSE	SOLUTION
1) ***X***ST 4WD Truggy RTR pulls to one side	A) Steering trim out of adjustment B) Toe angle out of adjustment C) One wheel is hanging or has damaged bearing	A) Readjust trim to centre both wheels (Pg10) B) Readjust toe angle (Pg18) C) Remove wheel and clean or replace bearing
2) Brakes seem ineffective	A) Brake linkage out of adjustment B) Brake disc(s) worn	A) Readjust brake linkage (Pg19) B) Replace affected brake disc(s)
3) Clutch does not engage	A) Clutch shoes damaged or worn B) Clutch bell damaged or worn C) Clutch shoes glazed	A) Replace clutch shoes B) Replace clutch bell C) Remove glaze using fine sandpaper and reinstall
4) Clutch does not disengage	A) Clutch spring(s) worn or damaged	A) Replace clutch springs
5) ***X***ST 4WD Truggy RTR does not 'go'	A) Stripped or damaged spur gear B) Stripped differential gear(s) C) Swing shaft(s) slipping and/or broken D) Outdrive cup(s) slipping E) Clutch not engaging G) Carburettor set too rich	A) Replace spur gear B) Replace differential gear(s) C) Tighten grub screw(s) and/or replace swing shaft(s) D) Tighten grub screw(s) in outdrive cup(s) E) Check clutch assembly and repair or replace G) Lean high speed needle valve (Pg16)
6) Suspension not smooth or free	A) One or more shocks sticking B) Bent shock shaft(s) C) Bent or otherwise damaged hinge pin(s) D) Hinge pin bolts/nuts too tight	A) Clean and/or rebuild the affected shock(s) B) Rebuild affected shock(s)/replace affected shock shafts(s) C) Replace hinge pin(s) D) Loosen hinge pin bolts/nuts to ensure free movement
7) Shocks leaking oil	A) Shock seals worn B) Bent shock shaft(s) C) Bottom cap not tight	A) Replace shock seals B) Replace affected shock shaft(s) C) Tighten bottom cap securely
8) Spur gear strips out	A) Gear mesh too loose	A) Replace spur gear and readjust gear mesh (Pg23)
9) ***X***ST 4WD Truggy RTR rolls while engine is idling	A) Engine idle is set too high B) Clutch spring(s) worn out	A) Lower your engine's idle speed (Pg12) B) Replace clutch springs
10) Screws loosen and/or fall out during use	A) Vibration under normal use	A) Clean screw(s) and/or replace and use threadlock to secure them in place
11) Steering sensitivity is 'sluggish'	A) Servo saver spring is set too loose	A) Tighten servo saver spring (Pg22)

ASSEMBLY MANUAL

The Assembly Manual contains several sections. The first section details the assembly of the ***X***ST 4WD Truggy RTR. Detailed drawings in a step-by-step format make it easy to disassemble and reassemble the ***X***ST 4WD Truggy RTR. This is useful when it's necessary to replace damaged or worn parts or when it's time for a complete tear down for cleaning. The second section lists all of the replacement parts that are available for purchase. For your convenience, a drawing of each replacement parts pack is shown, along with a description and the XTM Racing order number. The third section is a list of option parts that are available, in the same format as the replacement parts.

When it comes time to order replacement parts and option parts, we recommend ordering directly from your local hobby retailer. If your hobby retailer does not stock XTM Racing products, contact your closest distributor for a local dealer, using the Customer Service Information on page 3.

ASSEMBLY MANUAL (PAGES 26~52)

REPLACEMENT PARTS (PAGES 53~58)

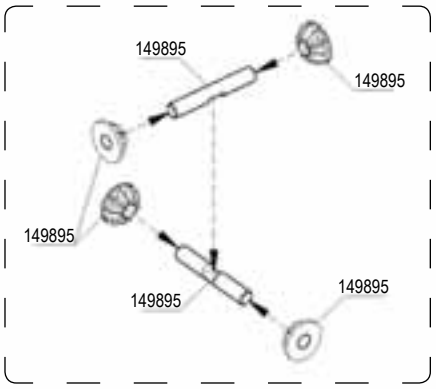
OPTION PARTS (PAGES 59~63)

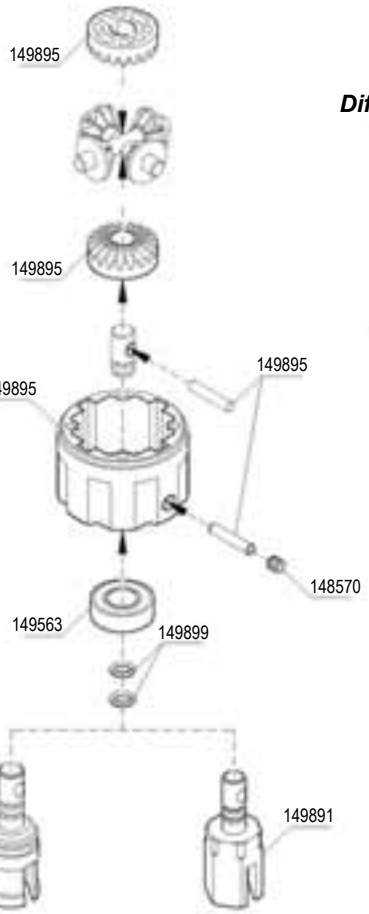
STEP 1: FRONT, REAR AND CENTRE DIFFERENTIALS

(149899) O-Ring 3x1mm -- 12

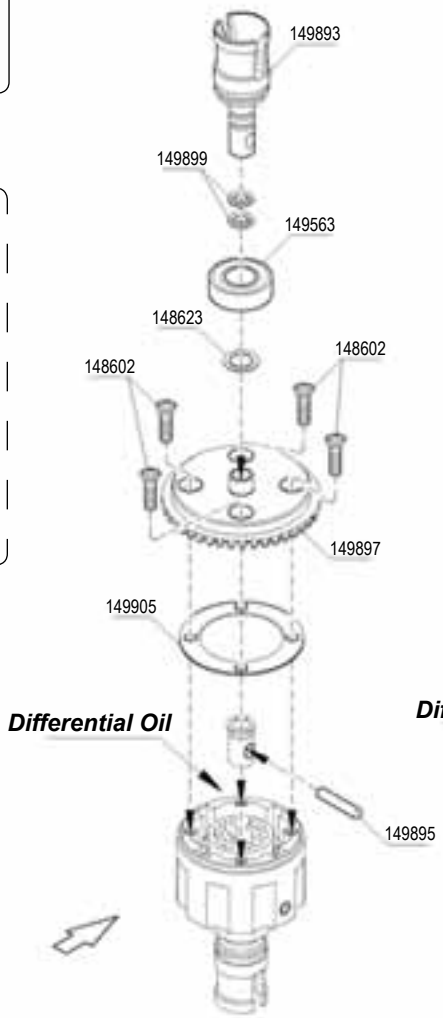
(149895) Pin 2.5x12.8mm -- 6

(149895) Pin 4x26.6mm -- 6

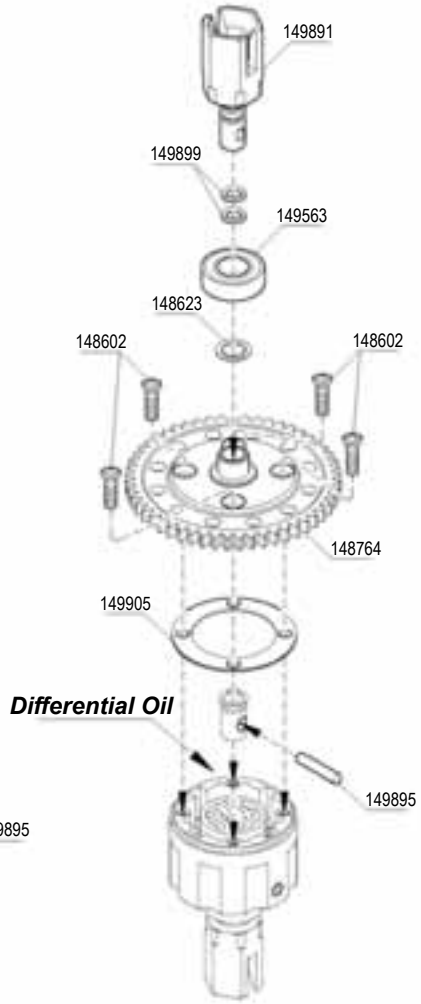




For Front and Rear (x2) *For Centre*



For Front and Rear (x2)



For Centre

(146712, 146714, 146710) Differential Oil -- 1

(148570) Grub Screw w/Threadlock 4x4mm -- 3

(148602) F/H Tapping Screw 3x16mm -- 12

(148623) Shim 8x12x0.4mm -- 3

(149563) Ball Bearing 8x16x5mm -- 6

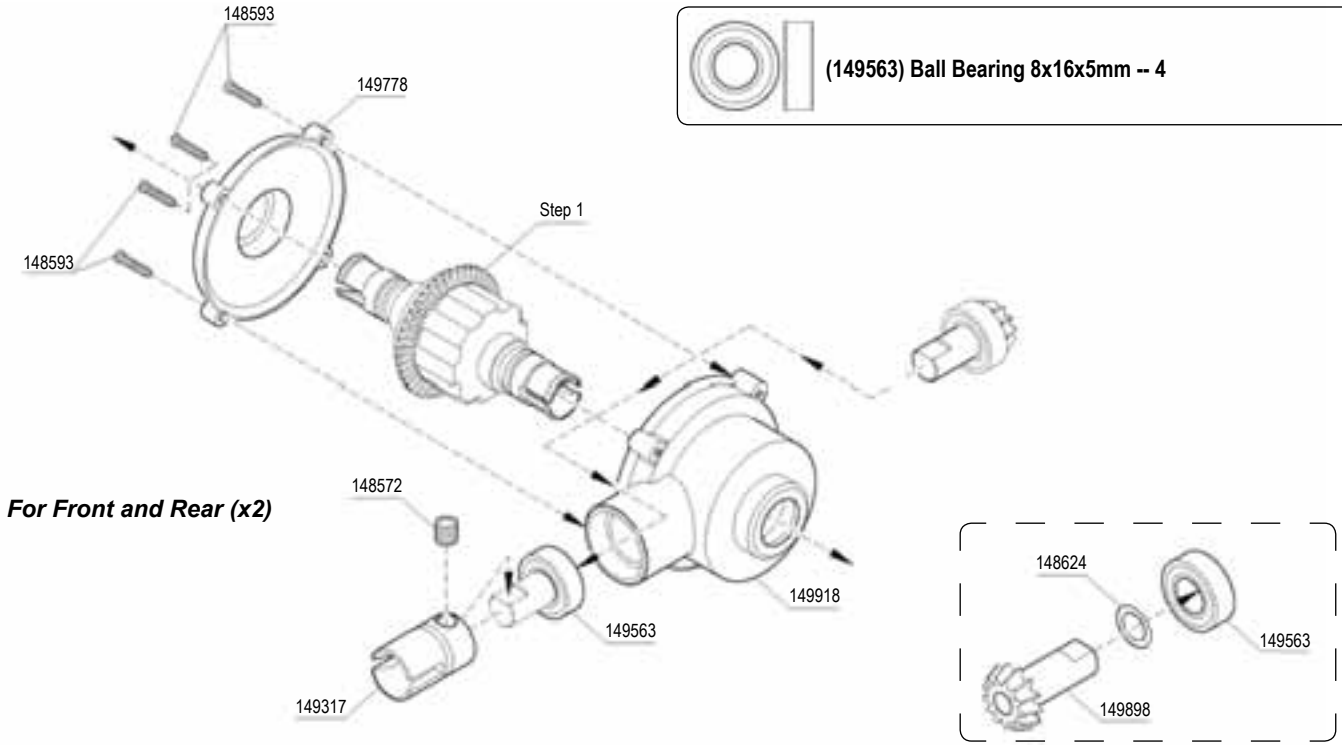
STEP 2: FRONT AND REAR DIFFERENTIAL HOUSINGS

(148624) Shim 8x12x0.2mm -- 2

(148593) Round Head Tapping Screw 2x10mm -- 8

(148572) Grub Screw w/Threadlock 5x4mm -- 2

(149563) Ball Bearing 8x16x5mm -- 4

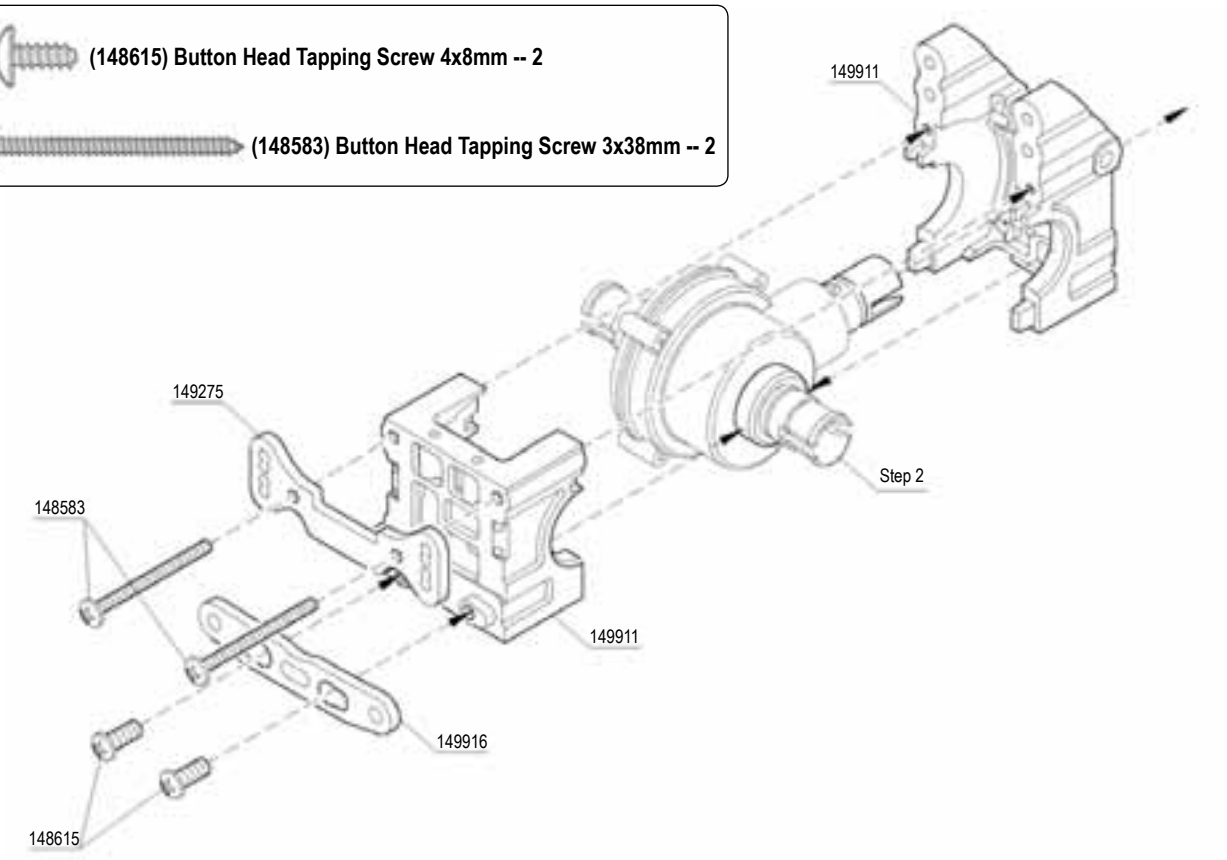


For Front and Rear (x2)

STEP 3: FRONT GEARBOX

(148615) Button Head Tapping Screw 4x8mm -- 2

(148583) Button Head Tapping Screw 3x38mm -- 2



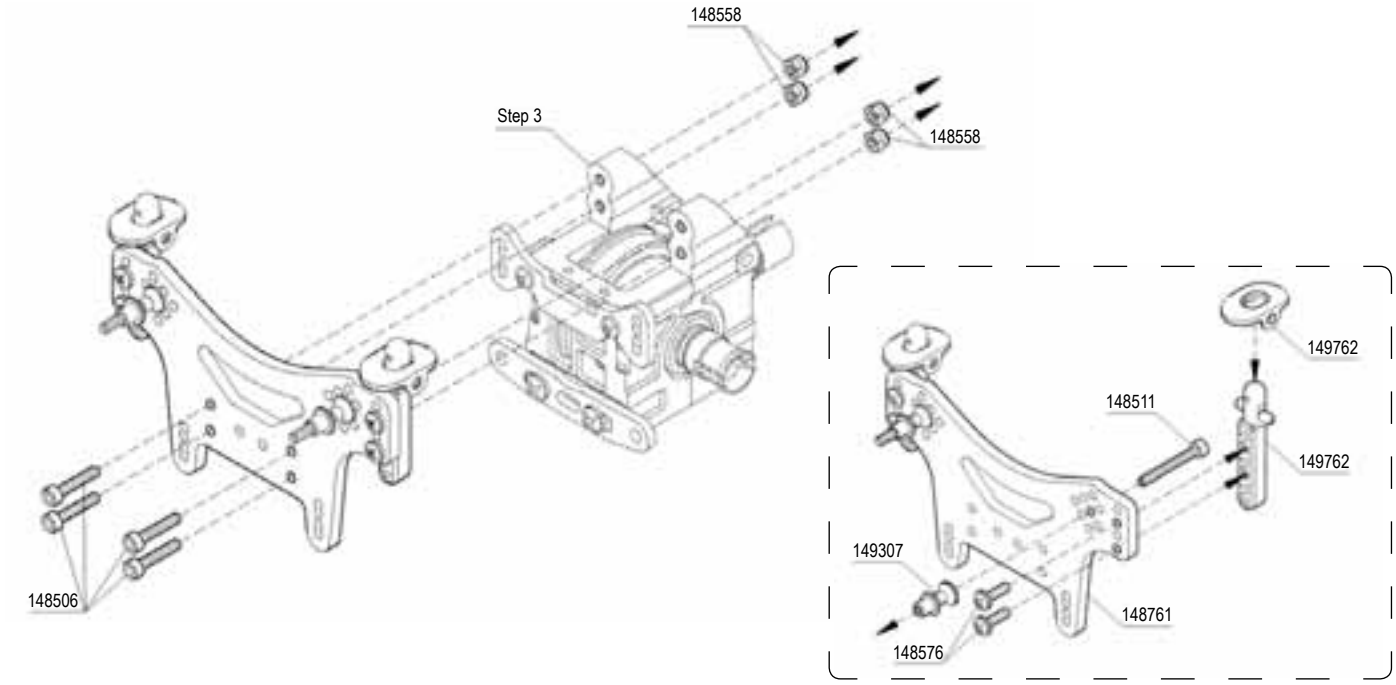
STEP 4: FRONT SHOCK TOWER

(148558) Lock Nut 3mm -- 4

(148506) Cap Screw 3x16mm -- 4

(148576) Button Head Tapping Screw 3x10mm -- 1

(148511) Cap Screw 3x25mm -- 2



STEP 5: FRONT CVD AND STEERING KNUCKLES

(149506) Grub Screw w/Threadlock 4x3mm -- 4

(148574) Grub Screw w/Threadlock 5x5mm -- 2

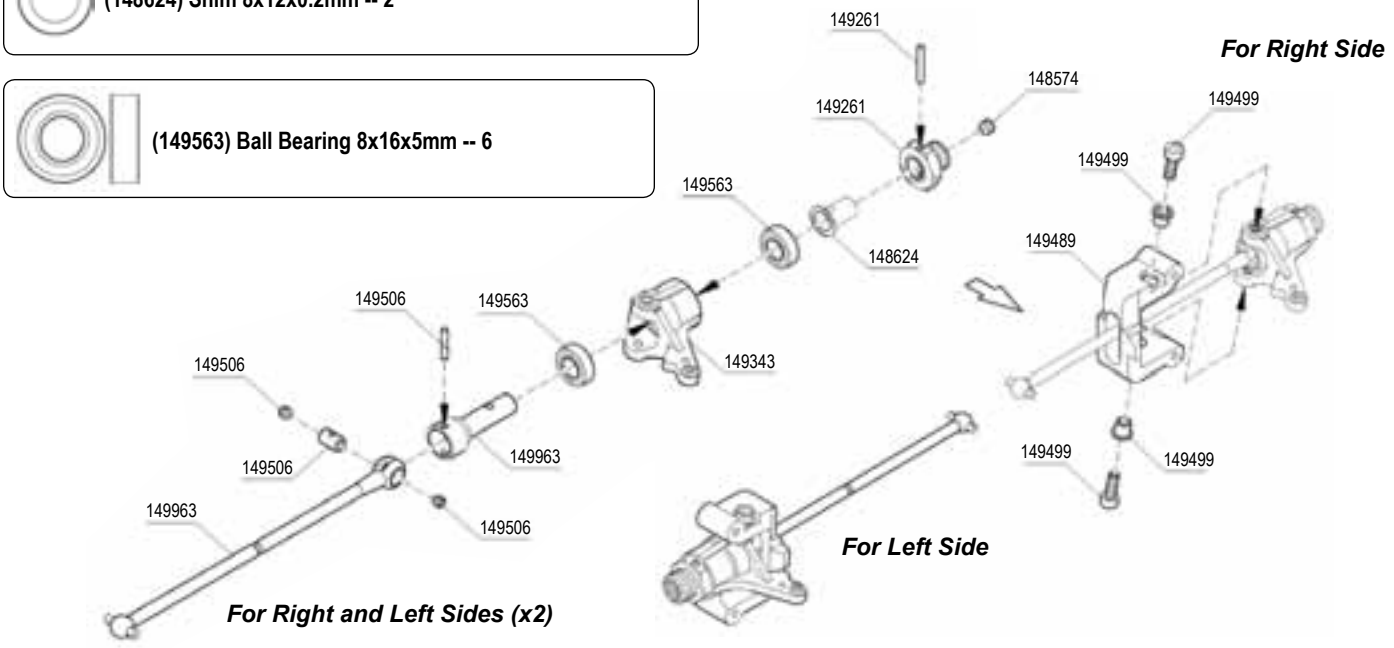
(149506) Pin 2.5x13.8mm -- 2

(149261) Pin 2.5x16.8mm -- 2

(149499) Cap Screw w/Threadlock 4x12mm -- 4

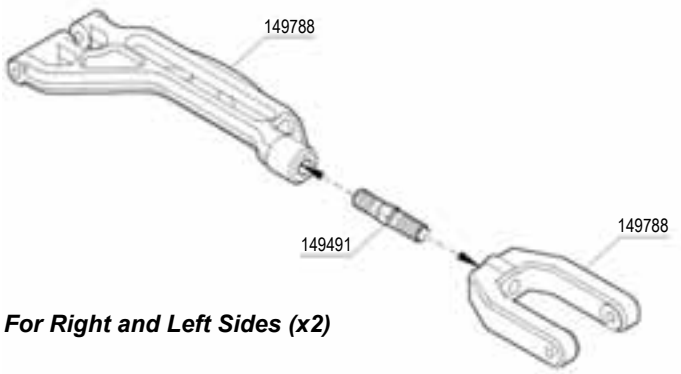
(148624) Shim 8x12x0.2mm -- 2

(149563) Ball Bearing 8x16x5mm -- 6

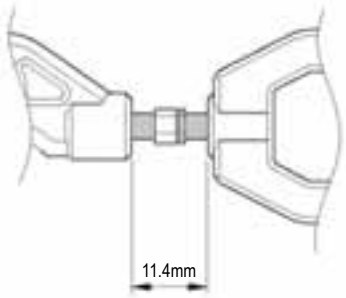


STEP 6: FRONT UPPER SUSPENSION ARMS

(149491) Turnbuckle 5x25mm -- 2



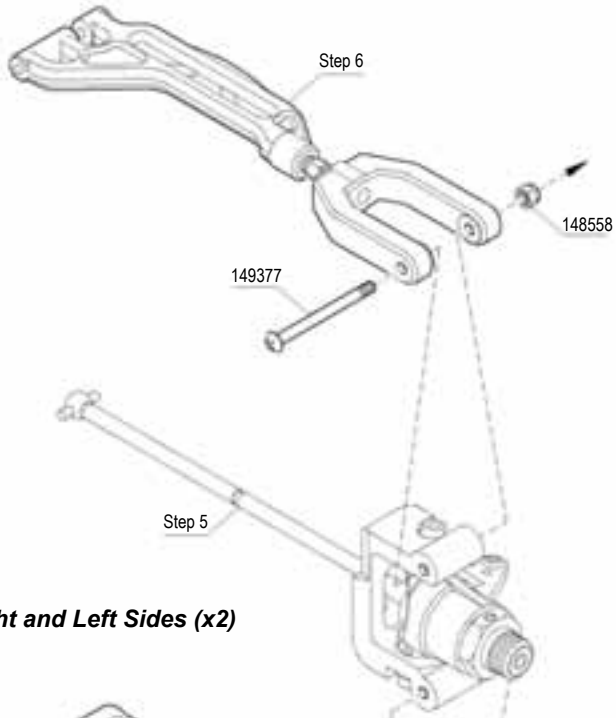
For Right and Left Sides (x2)



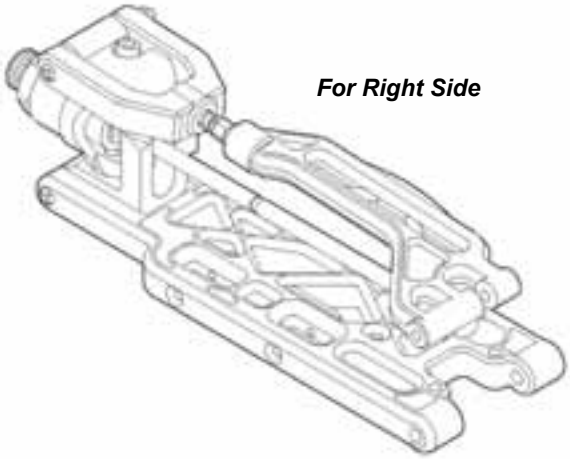
STEP 7: FRONT LOWER SUSPENSION ARMS AND CVD

(148558) Lock Nut 3mm -- 4

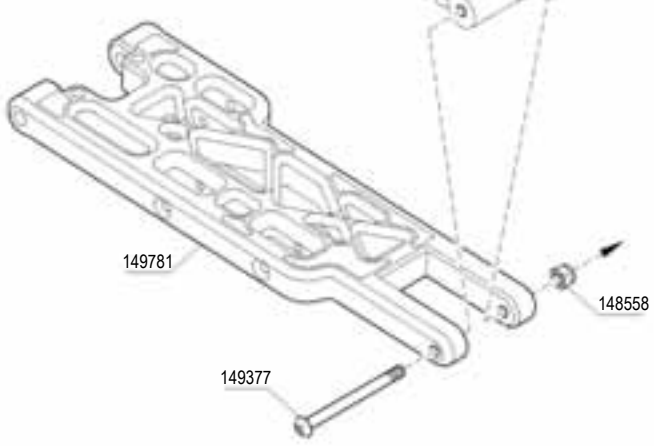
(149377) Hub Stub 3x37.5mm -- 4

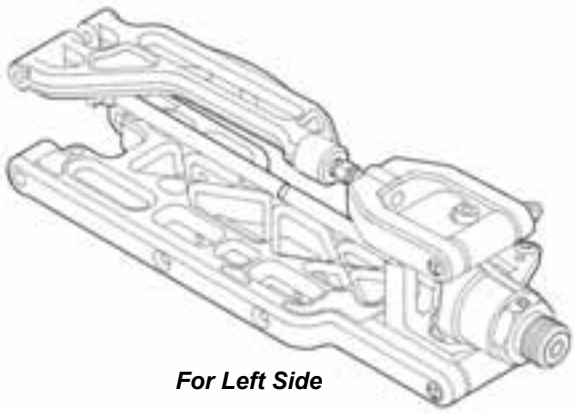


For Right and Left Sides (x2)



For Right Side





For Left Side

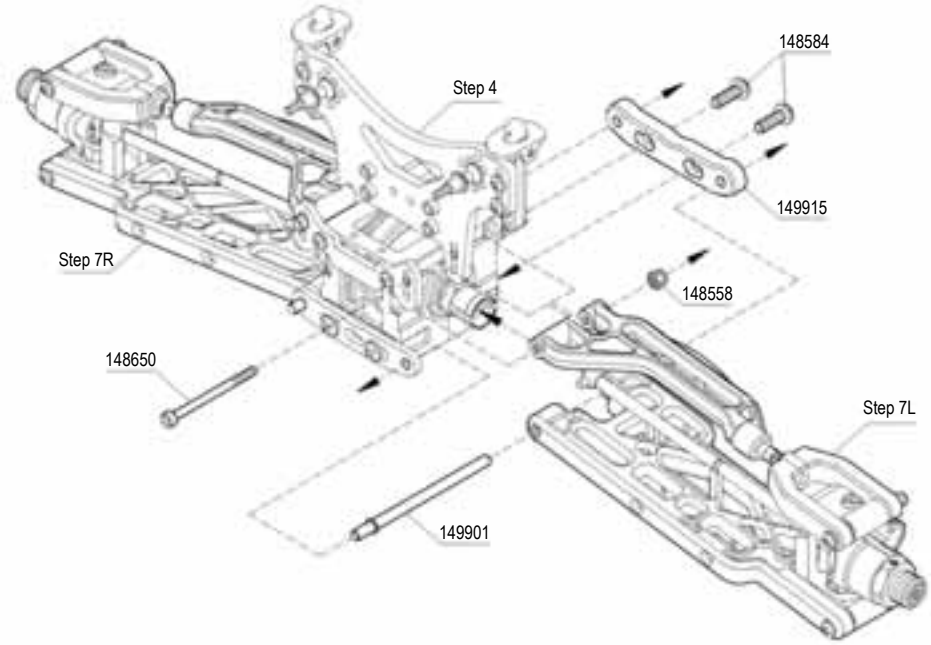
STEP 8: FRONT SUSPENSION

(148558) Lock Nut 3mm -- 1

(149901) Hinge Pin 4x67.2mm -- 2

(148584) Button Head Tapping Screw 4x12mm -- 2

(148650) Cap Screw 3x42mm -- 2



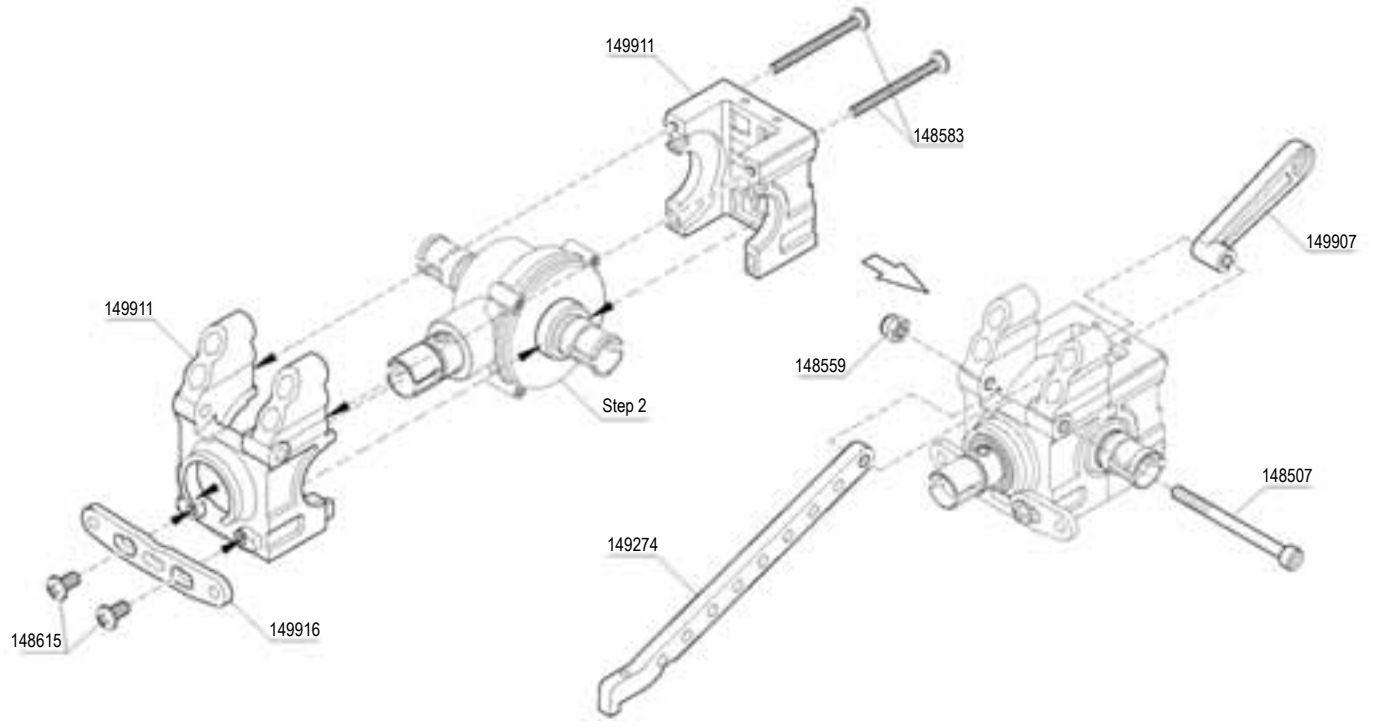
STEP 9: REAR GEARBOX

(148559) Lock Nut 4mm -- 1

(148583) Button Head Tapping Screw 3x38mm -- 2

(148615) Button Head Tapping Screw 4x8mm -- 2

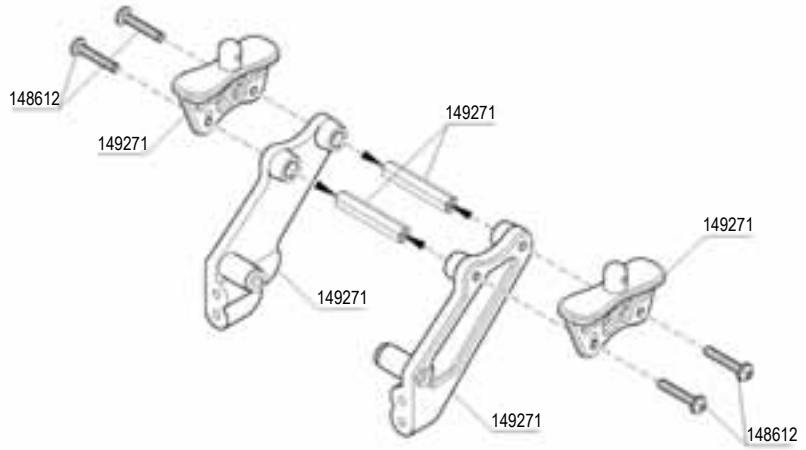
(148507) Cap Screw 4x50mm -- 1



STEP 10: WING MOUNT

(148612) Button Head Tapping Screw 3x18mm -- 4

(149271) Post 6x32mm -- 2



STEP 11: REAR SHOCK TOWER

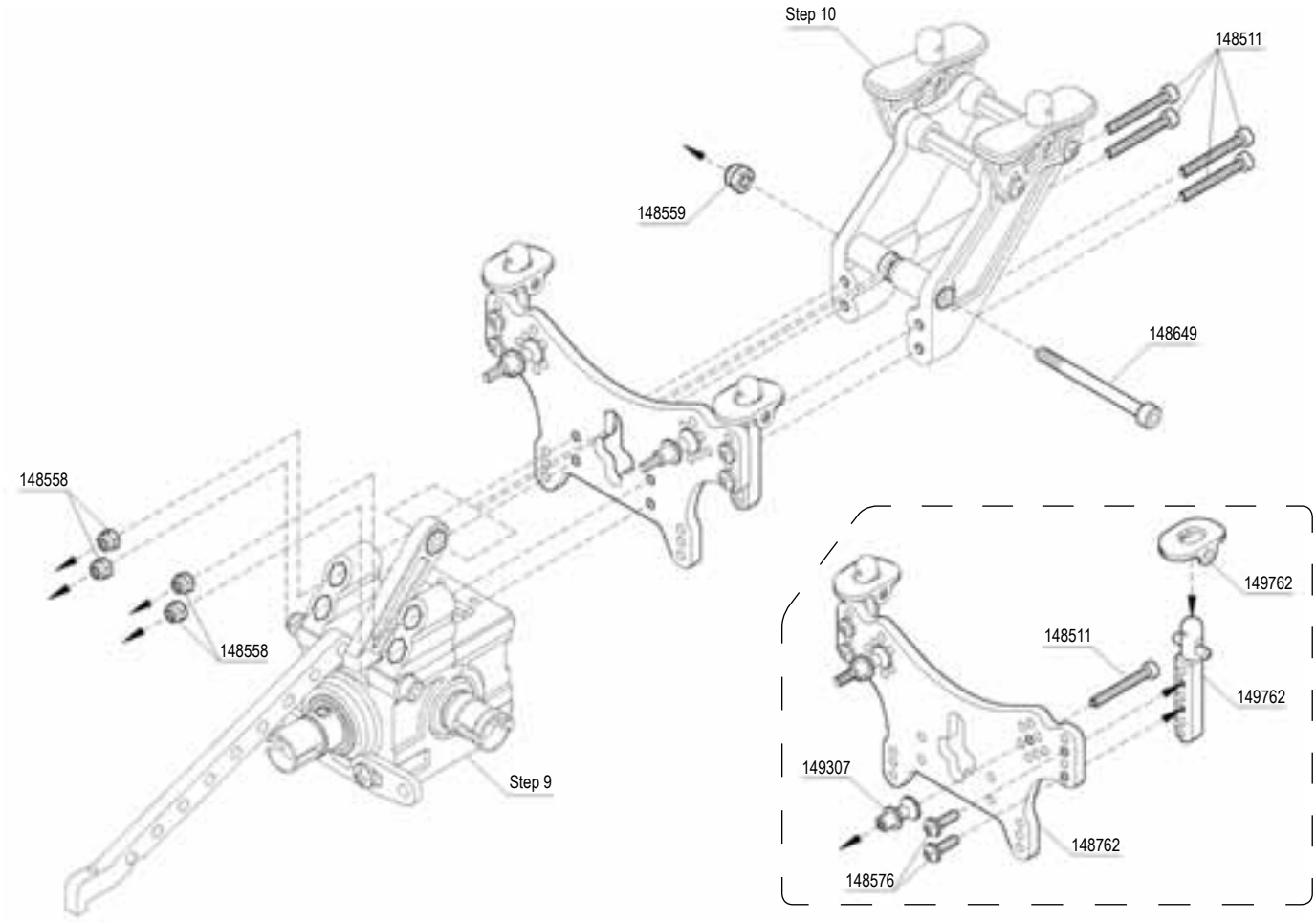
(148558) Lock Nut 3mm -- 4

(148559) Lock Nut 4mm -- 1

(148576) Button Head Tapping Screw 3x10mm -- 4

(148511) Cap Screw 3x25mm -- 4

(148649) Cap Screw 4x45mm -- 1



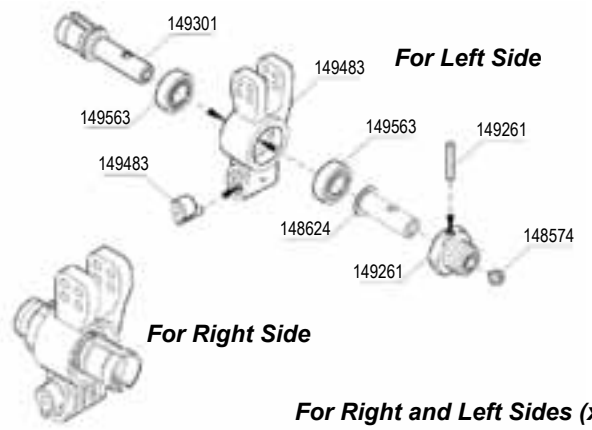
STEP 12: REAR HUBS

(148574) Grub Screw w/Threadlock 5x5mm -- 2

(149261) Pin 2.5x16.8mm -- 2

(148624) Shim 8x12x0.2mm -- 2

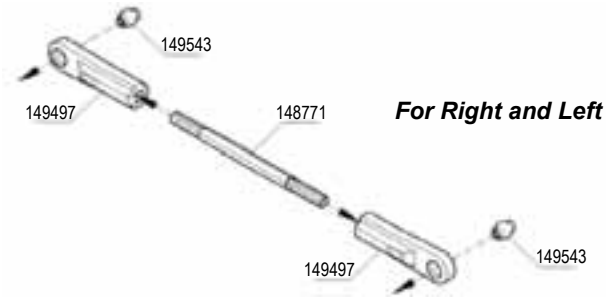
(149563) Ball Bearing 8x16x5mm -- 4



For Right and Left Sides (x2)

STEP 13: REAR UPPER SUSPENSION ARMS

(148771) Turnbuckle 5x84.5mm -- 2



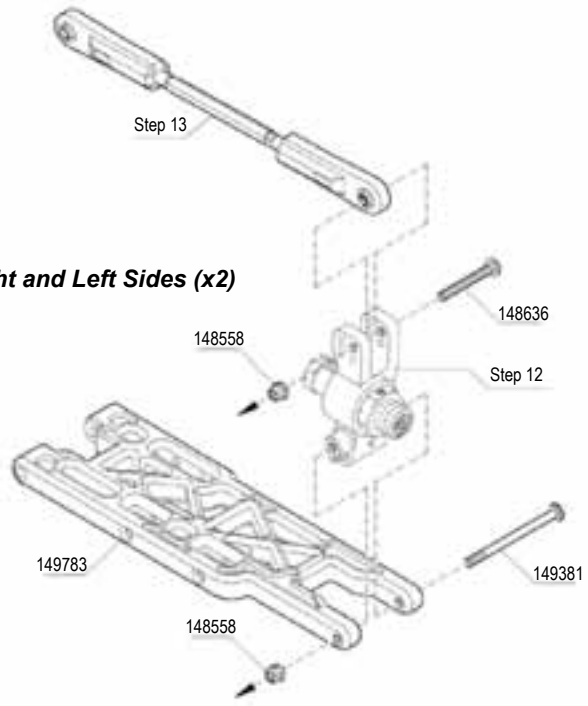
For Right and Left Sides (x2)

STEP 14: REAR LOWER SUSPENSION ARMS AND HUBS

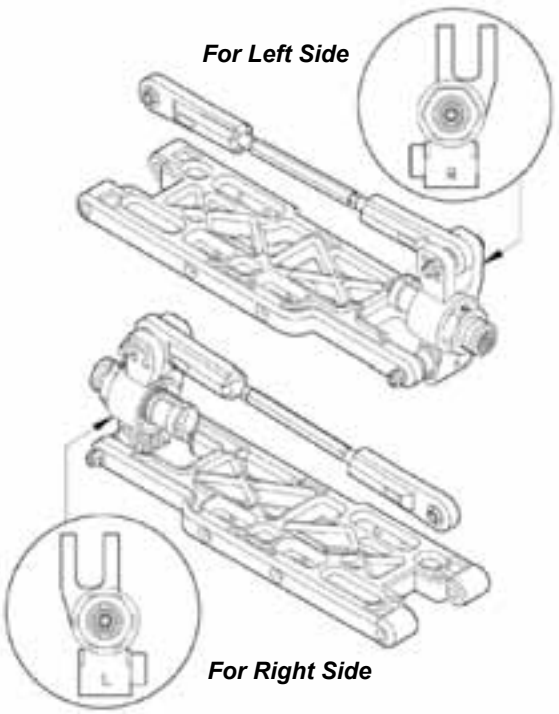
(148558) Lock Nut 3mm -- 4

(149381) Hub Stud 3x43.5mm -- 2

(148636) Button Head Screw 3x25mm -- 2



For Right and Left Sides (x2)



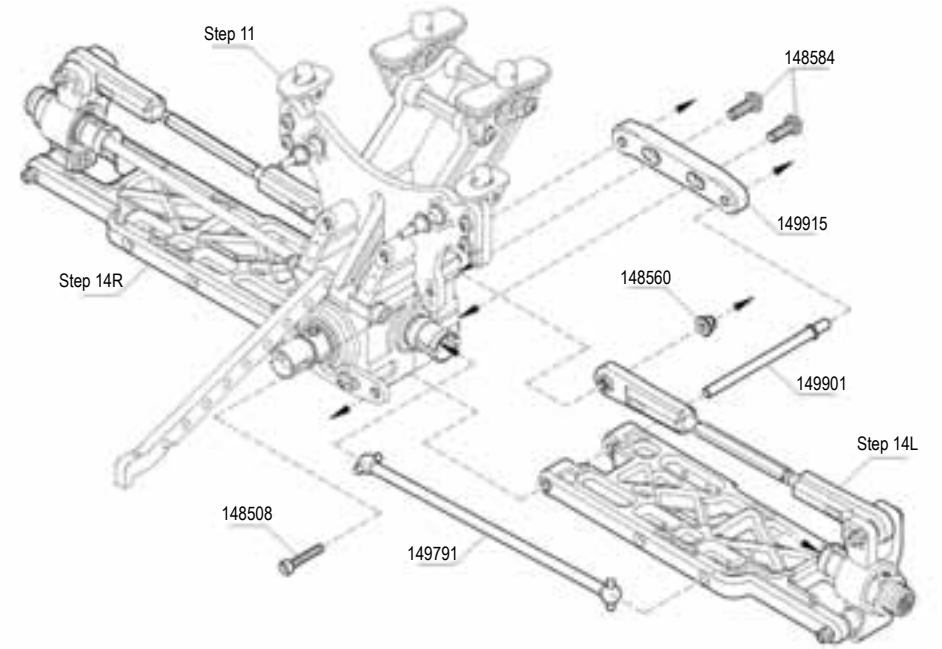
STEP 15: REAR SUSPENSION

(148560) Flanged Lock Nut 3mm -- 2

(149901) Hinge Pin 4x67.2mm -- 2

(148584) Button Head Tapping Screw 4x12mm -- 2

(148508) Cap Screw 3x18mm -- 2



STEP 16: REAR SWAY BAR

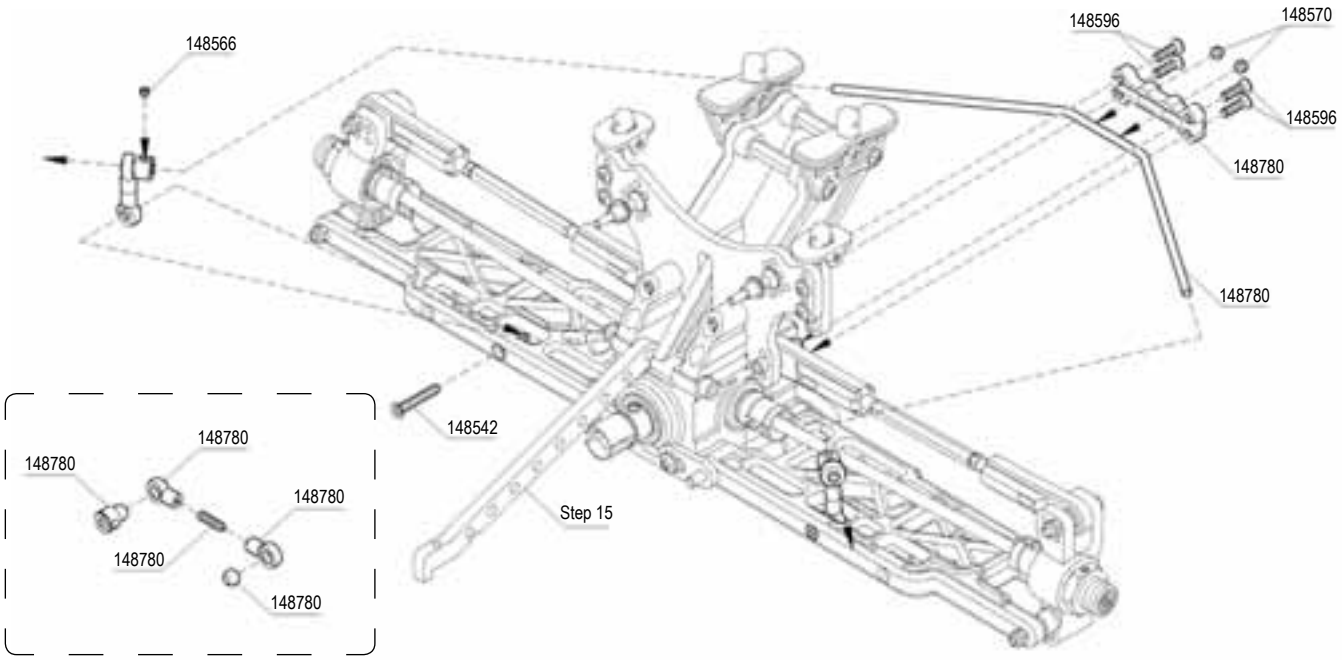
(148566) Grub Screw w/Threadlock 3x3mm -- 2

(148596) F/H Tapping Screw 3x12mm -- 4

(148570) Grub Screw w/Threadlock 4x4mm -- 2

(148542) F/H Screw 3x20mm -- 2

(148780) Threaded Stud 3x12mm -- 2

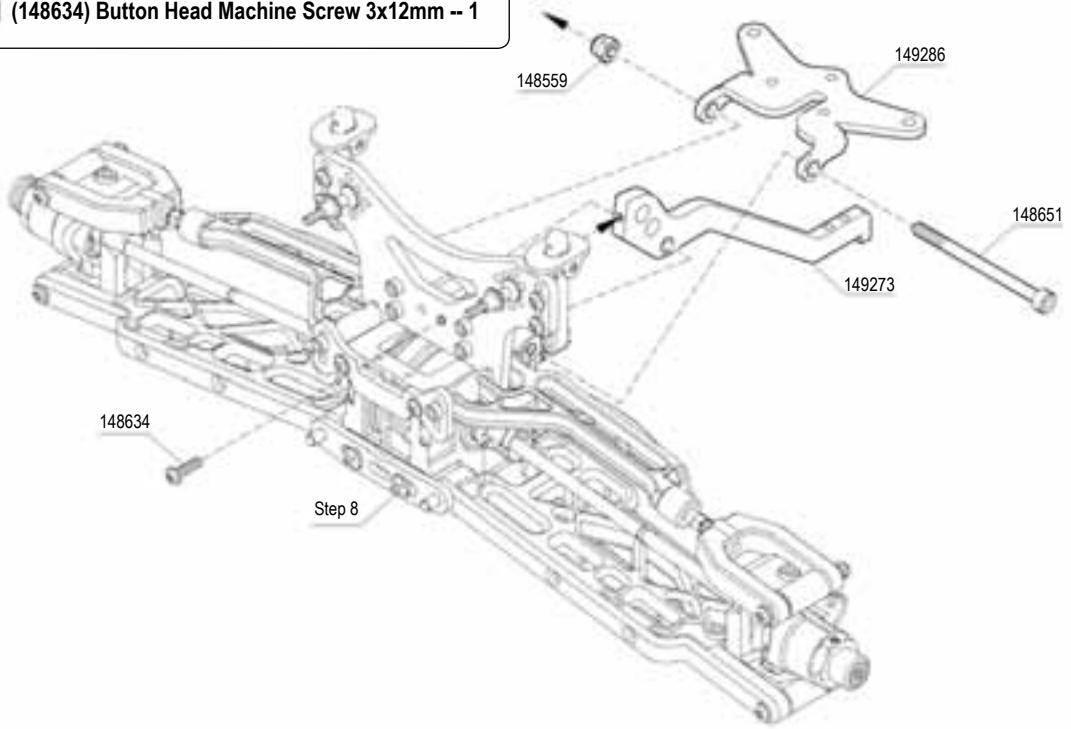


STEP 17: FRONT CHASSIS BRACE

(148559) Lock Nut 4mm -- 1

(148651) Cap Screw 4x55mm -- 1

(148634) Button Head Machine Screw 3x12mm -- 1



STEP 18: CHASSIS PLATE

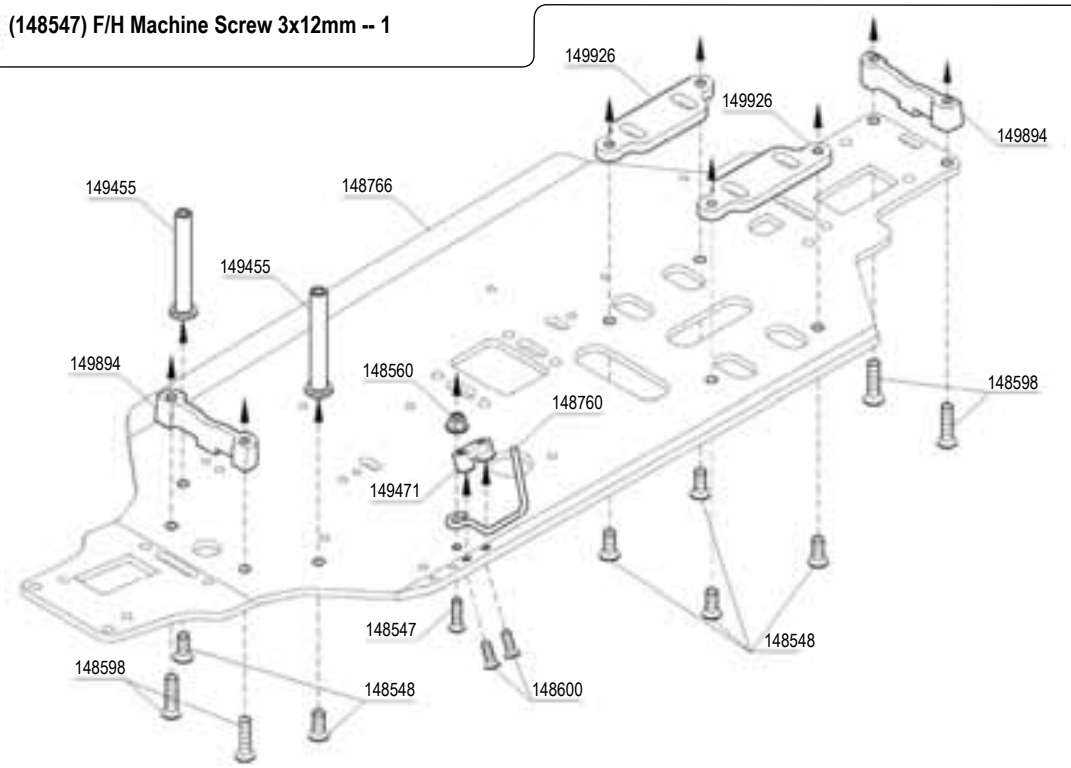
(148560) Flanged Lock Nut 3mm -- 1

(148548) F/H Machine Screw w/Threadlock 4x10mm -- 6

(148600) F/H Tapping Screw 3x10mm -- 2

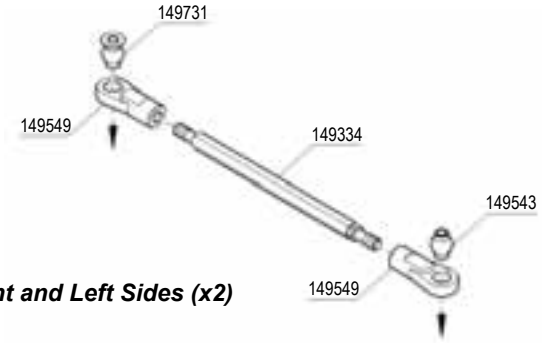
(148598) F/H Tapping Screw 4x16mm -- 4

(148547) F/H Machine Screw 3x12mm -- 1

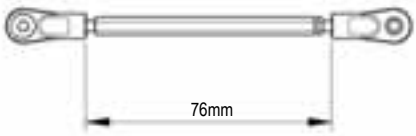


STEP 19: STEERING TIE-RODS

(149334) Turnbuckle 5x90.5mm -- 2



For Right and Left Sides (x2)



STEP 20: SERVO SAVER AND STEERING LINKAGES

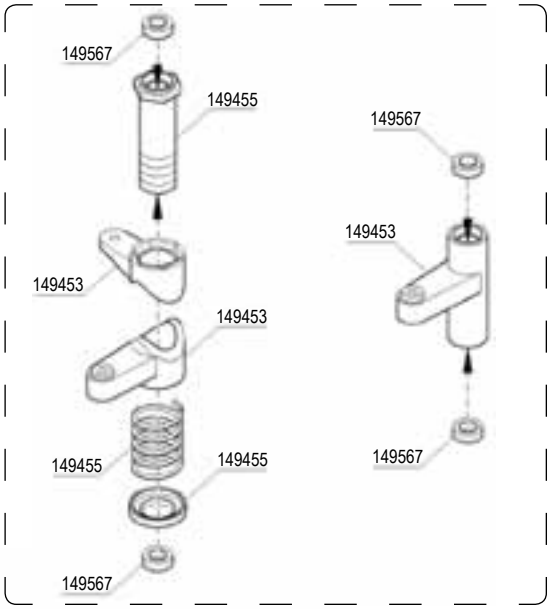
(148558) Lock Nut 3mm -- 4

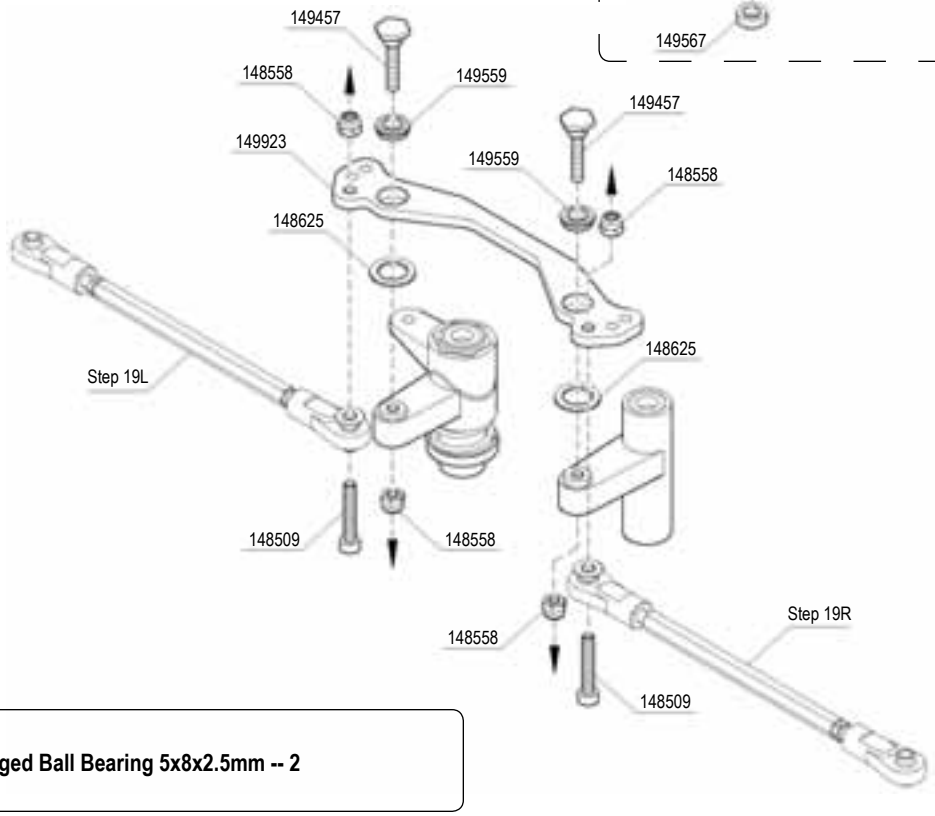
(148509) Cap Screw 3x20mm -- 2

(149457) Servo Saver Screw L=19.7mm -- 2

(149567) Bushing 6x10x3mm -- 4

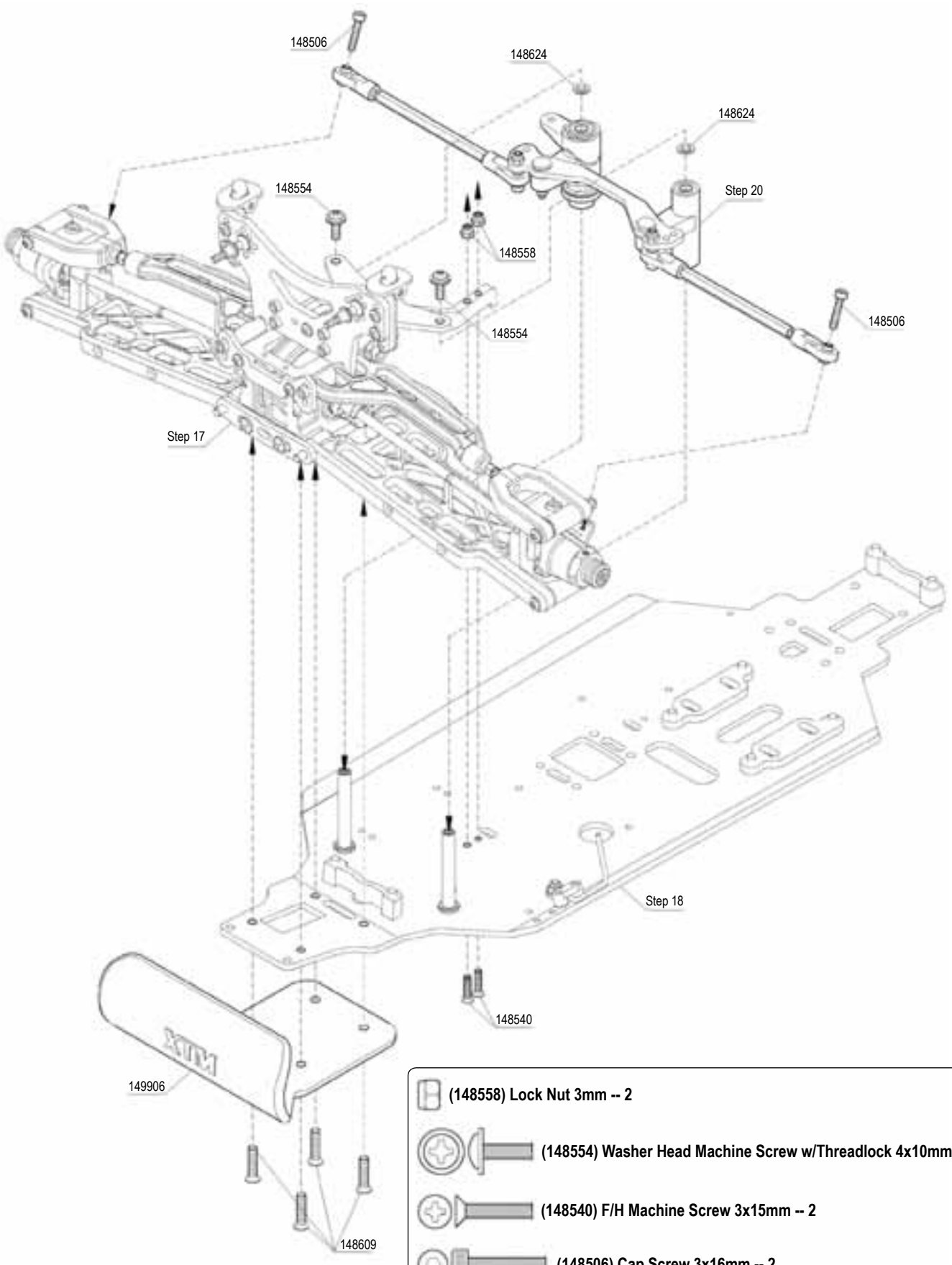
(148625) Shim 8x12x0.8mm -- 2





(149559) Flanged Ball Bearing 5x8x2.5mm -- 2

STEP 21: FRONT SUSPENSION MOUNTING AND STEERING LINKAGE



(148624) Shim 8x12x0.2mm -- 2

(148558) Lock Nut 3mm -- 2

(148554) Washer Head Machine Screw w/Threadlock 4x10mm -- 2

(148540) F/H Machine Screw 3x15mm -- 2

(148506) Cap Screw 3x16mm -- 2

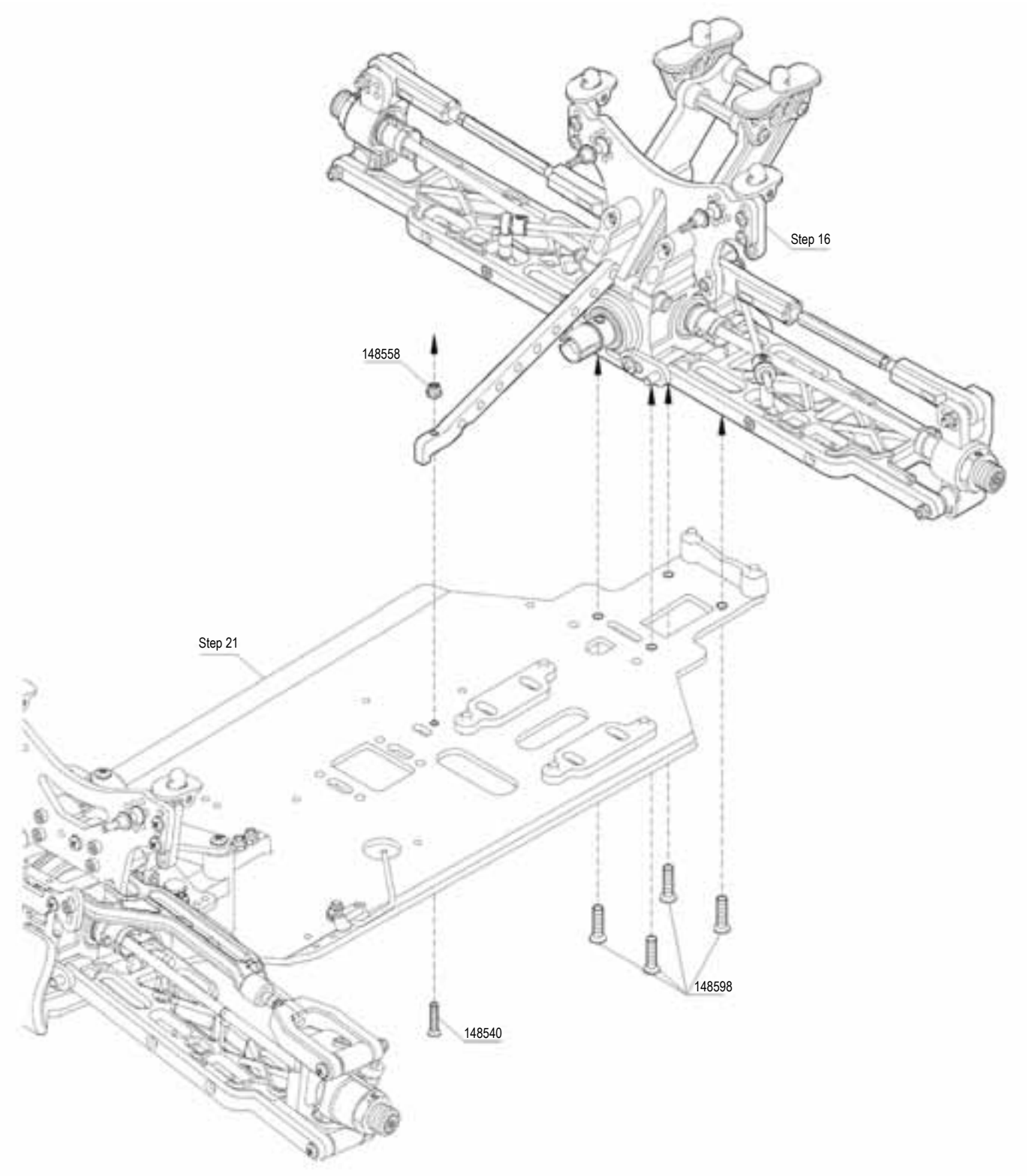
(148609) F/H Tapping Screw 4x18mm -- 4

STEP 22: REAR SUSPENSION MOUNTING

(148558) Lock Nut 3mm -- 1

(148598) F/H Tapping Screw 4x16mm -- 4

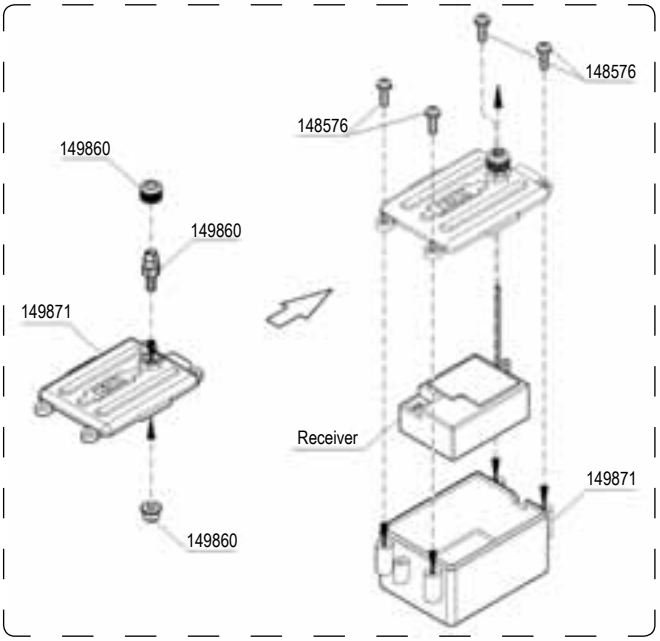
(148540) F/H Machine Screw 3x15mm -- 1

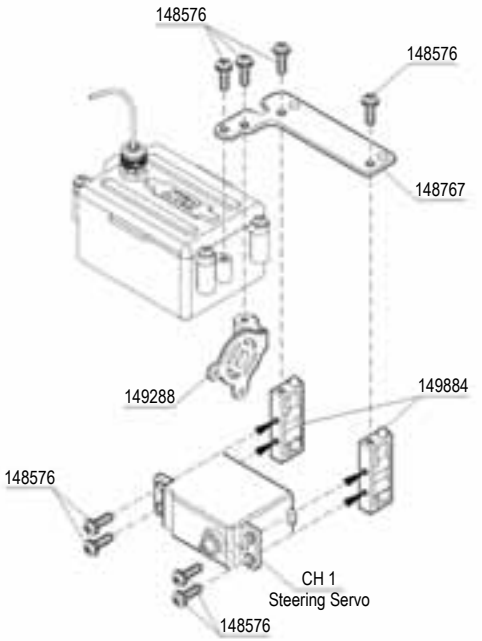


STEP 23: RECEIVER BOX

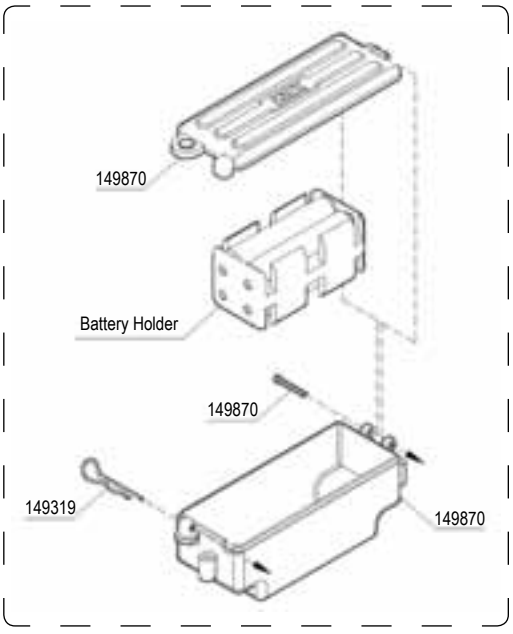
(149860) Flanged Lock Nut 4mm -- 1

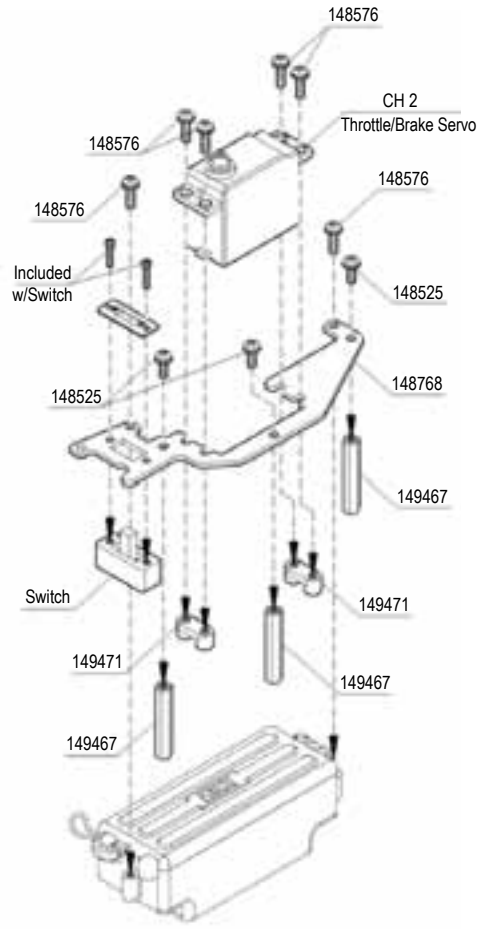
(148576) Button Head Tapping Screw 3x10mm -- 12





STEP 24: BATTERY BOX





(Included w/Switch) Round Head Machine Screw 2x10mm -- 2

(149870) Round Head Machine Screw 2x15mm -- 1

(148525) Button Head Machine Screw w/Threadlock 3x8mm -- 3

(148576) Button Head Tapping Screw 3x10mm -- 6

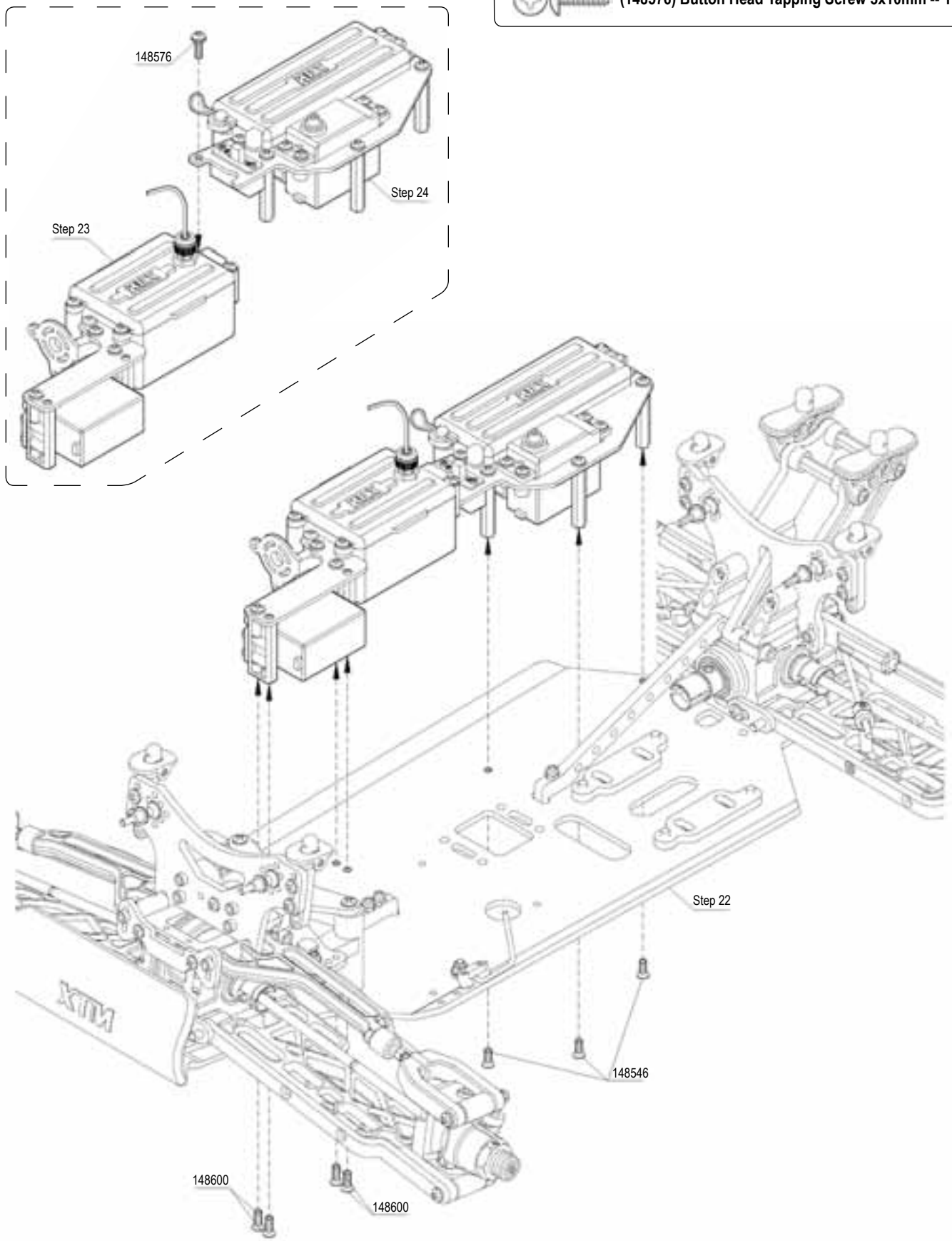
(149467) Post 6x32mm -- 3

STEP 25: RADIO TRAY MOUNTING

(148546) F/H Machine Screw w/Threadlock 3x8mm -- 3

(148600) F/H Tapping Screw 3x10mm -- 4

(148576) Button Head Tapping Screw 3x10mm -- 1



STEP 26: CENTRE DIFFERENTIAL

(148566) Grub Screw w/Threadlock 3x3mm -- 2

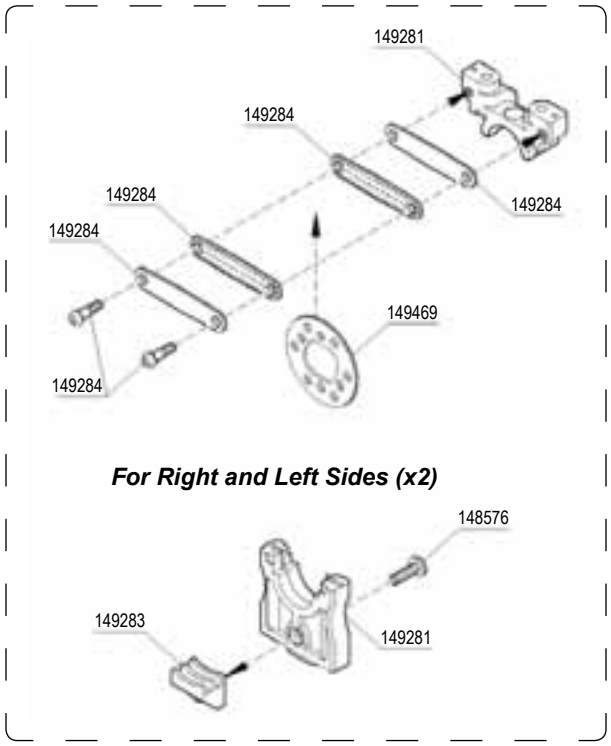
(148593) Round Head Tapping Screw 2x10mm -- 4

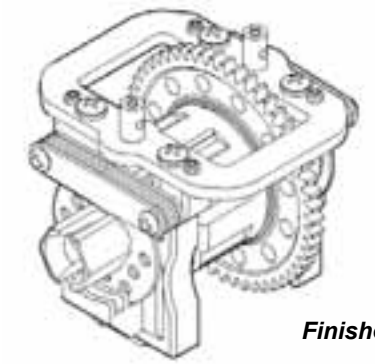
(149284) Brake Pin 3x10mm -- 4

(148576) Button Head Tapping Screw 3x10mm -- 2

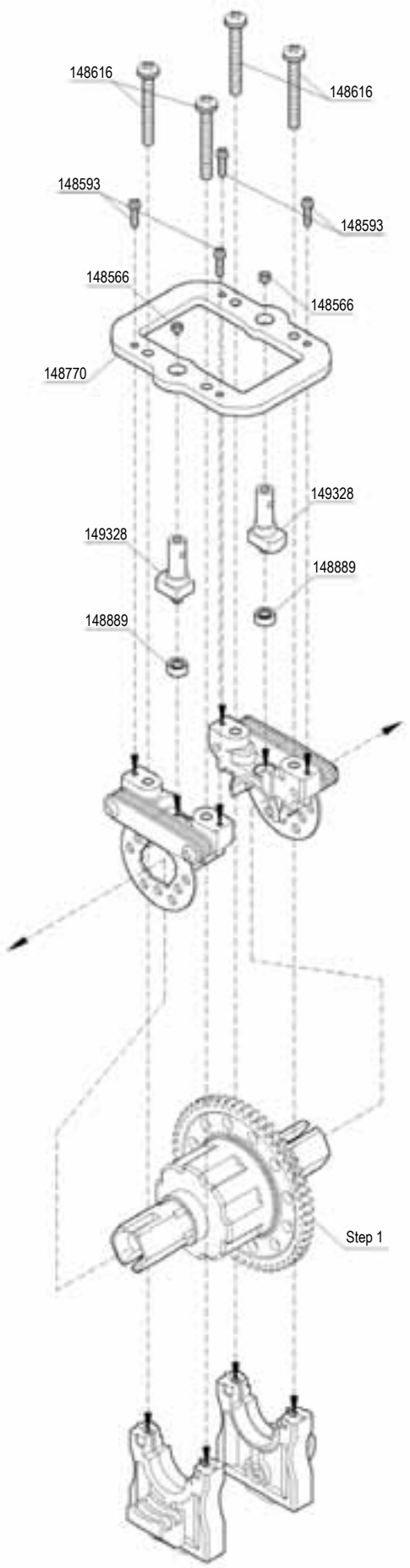
(148616) Button Head Tapping Screw 3x25mm -- 4

(148889) Ball Bearing 3x6x2.5mm -- 2



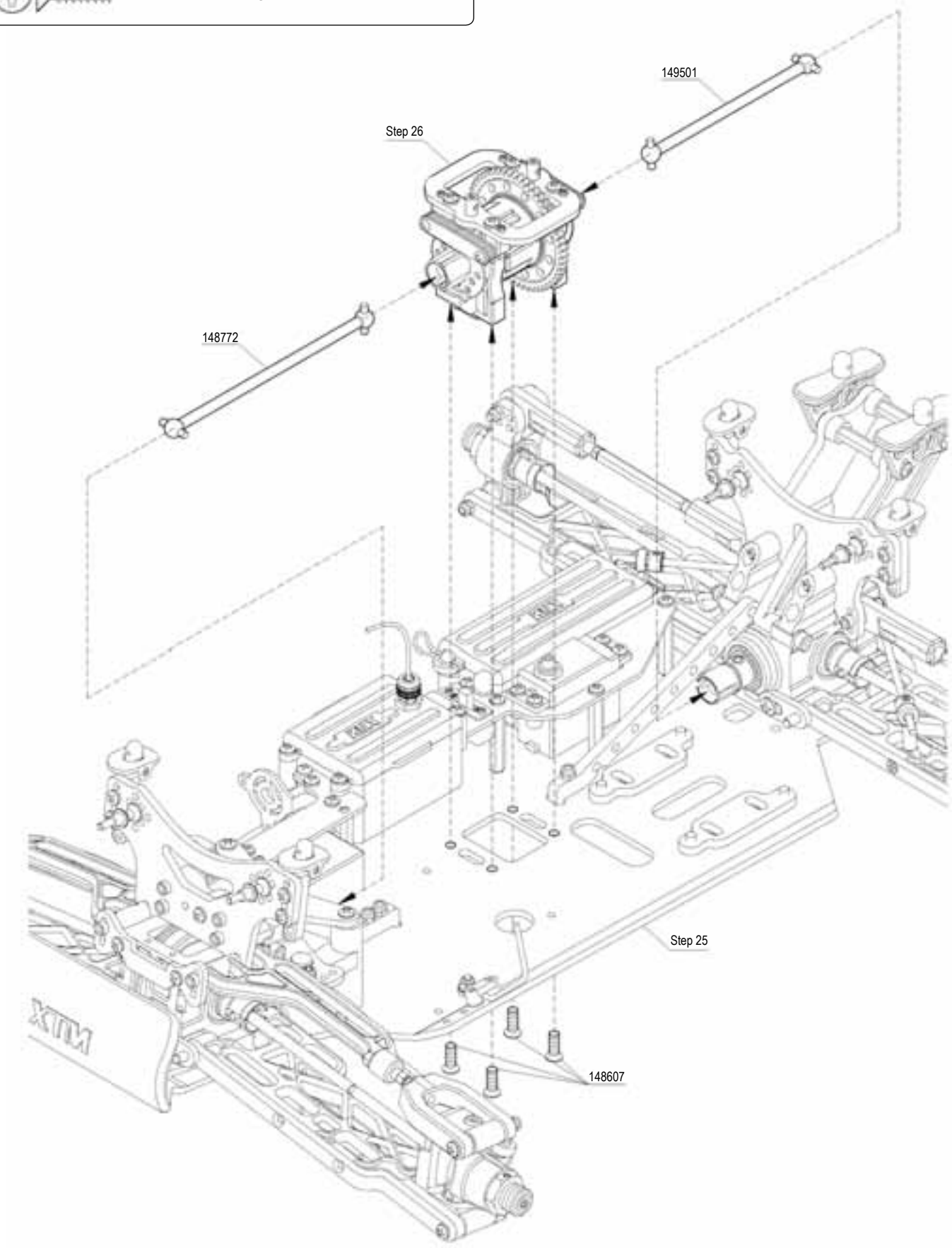


Finished



STEP 27: CENTRE DIFFERENTIAL AND DRIVE SHAFTS

(148607) F/H Tapping Screw 4x12mm -- 4



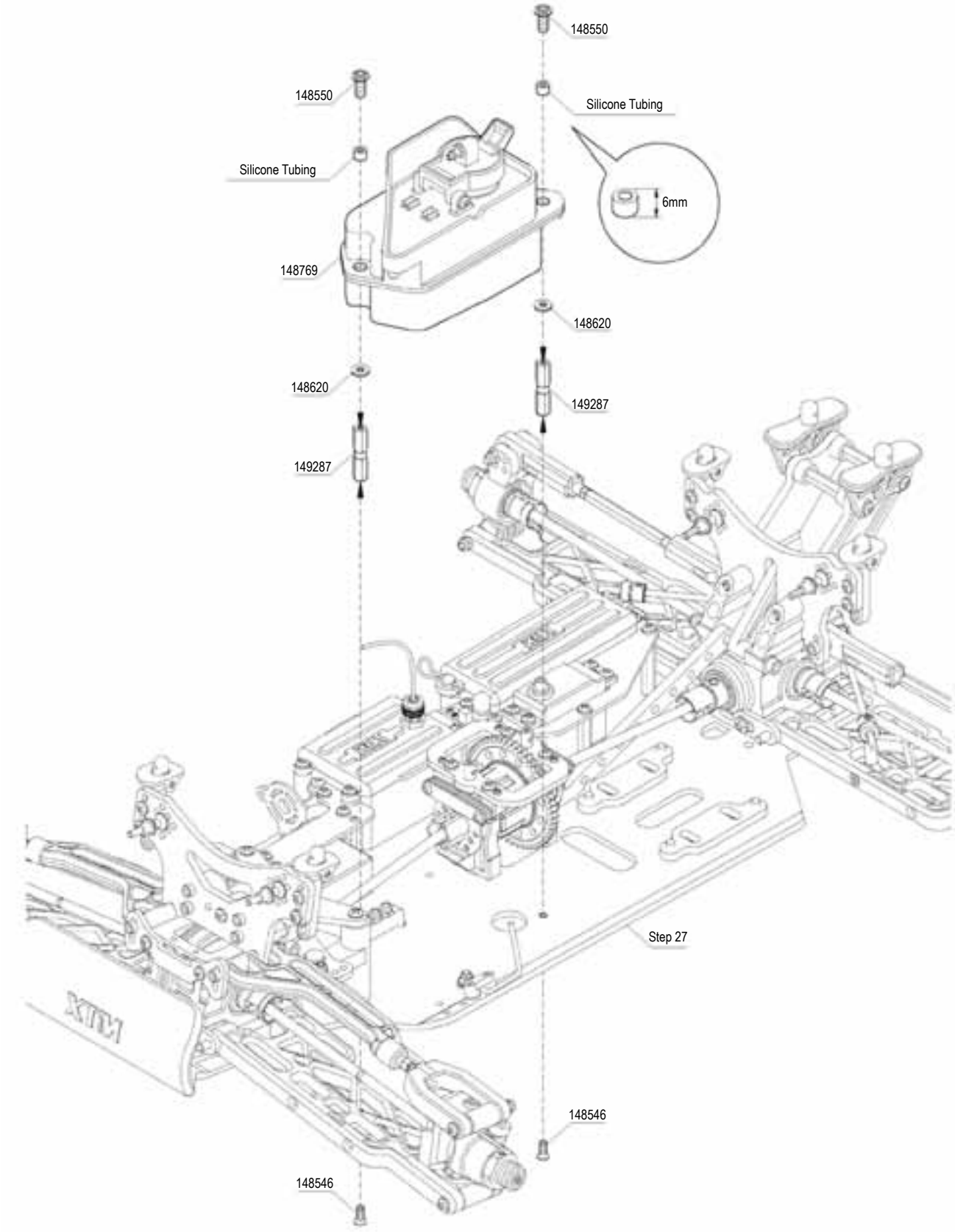
STEP 28: FUEL TANK

(148546) F/H Machine Screw w/Threadlock 3x8mm -- 2

(149287) Post 6x27.5mm -- 2

(148550) Washer Head Machine Screw w/Threadlock 3x10mm -- 2

(148620) Washer 3x8x1mm -- 2



STEP 29: ENGINE AND CLUTCH

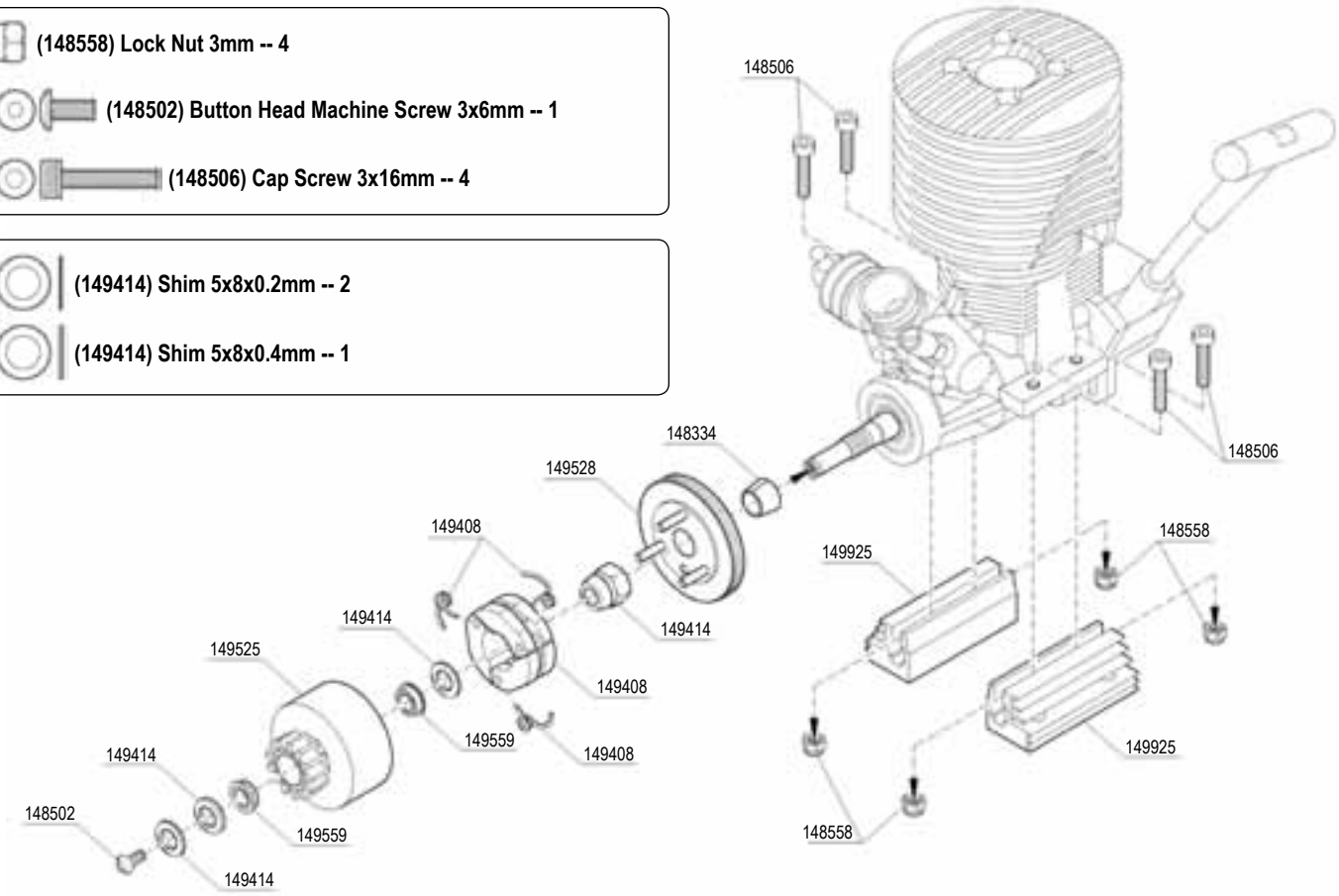
(148558) Lock Nut 3mm -- 4

(148502) Button Head Machine Screw 3x6mm -- 1

(148506) Cap Screw 3x16mm -- 4

(149414) Shim 5x8x0.2mm -- 2

(149414) Shim 5x8x0.4mm -- 1

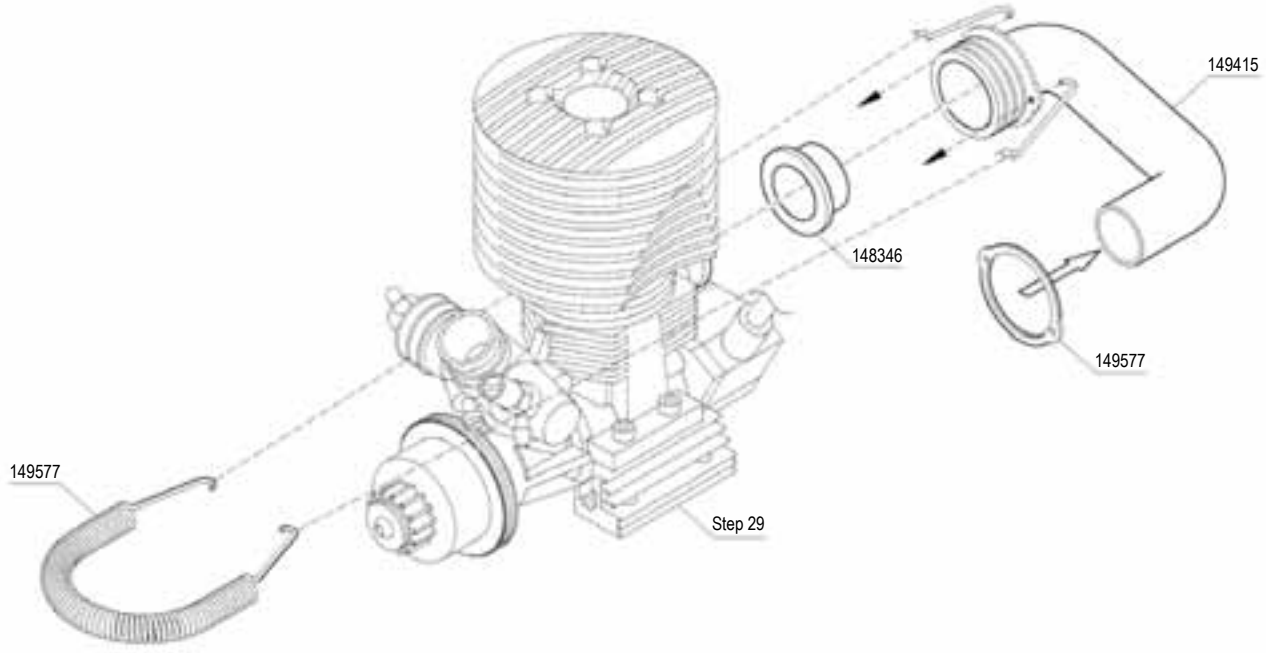


(149559) Flanged Ball Bearing 5x8x2.5mm -- 2

(148334) Collet for SG Shaft

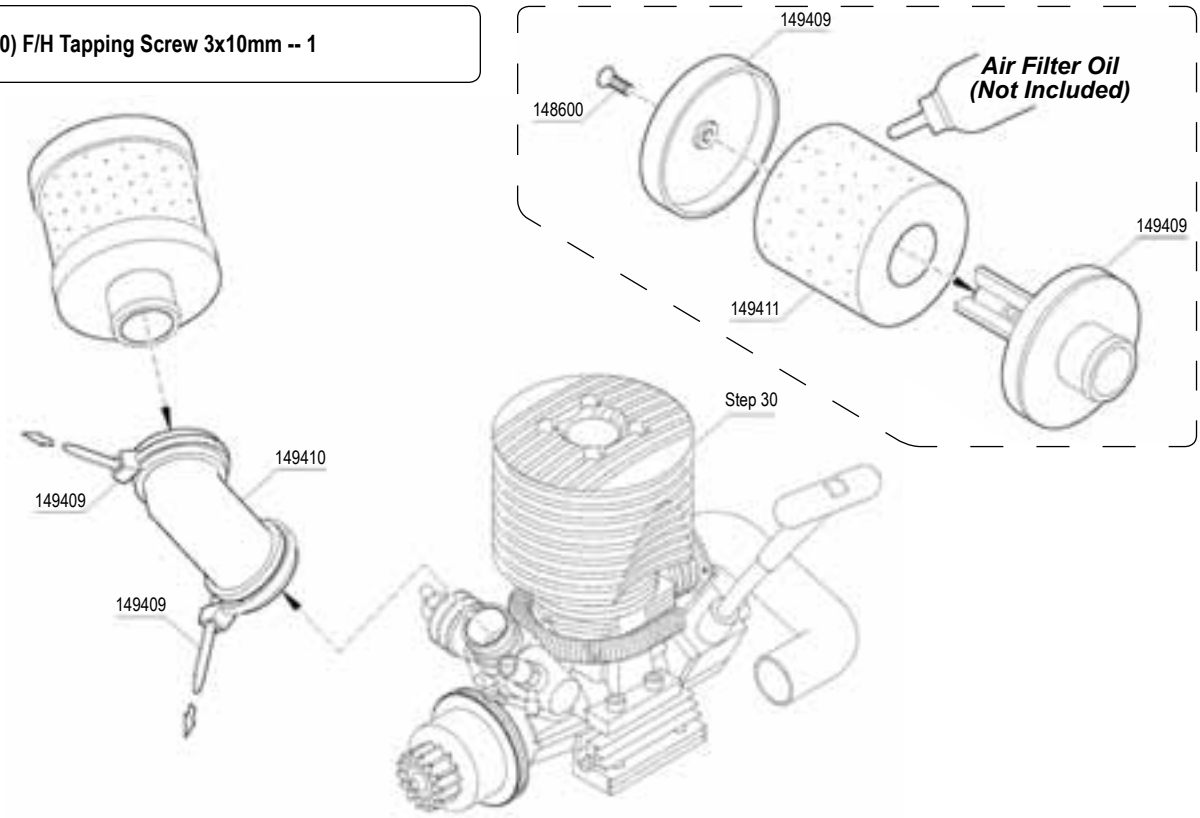
(149414) Engine Nut for SG Shaft

STEP 30: EXHAUST HEADER



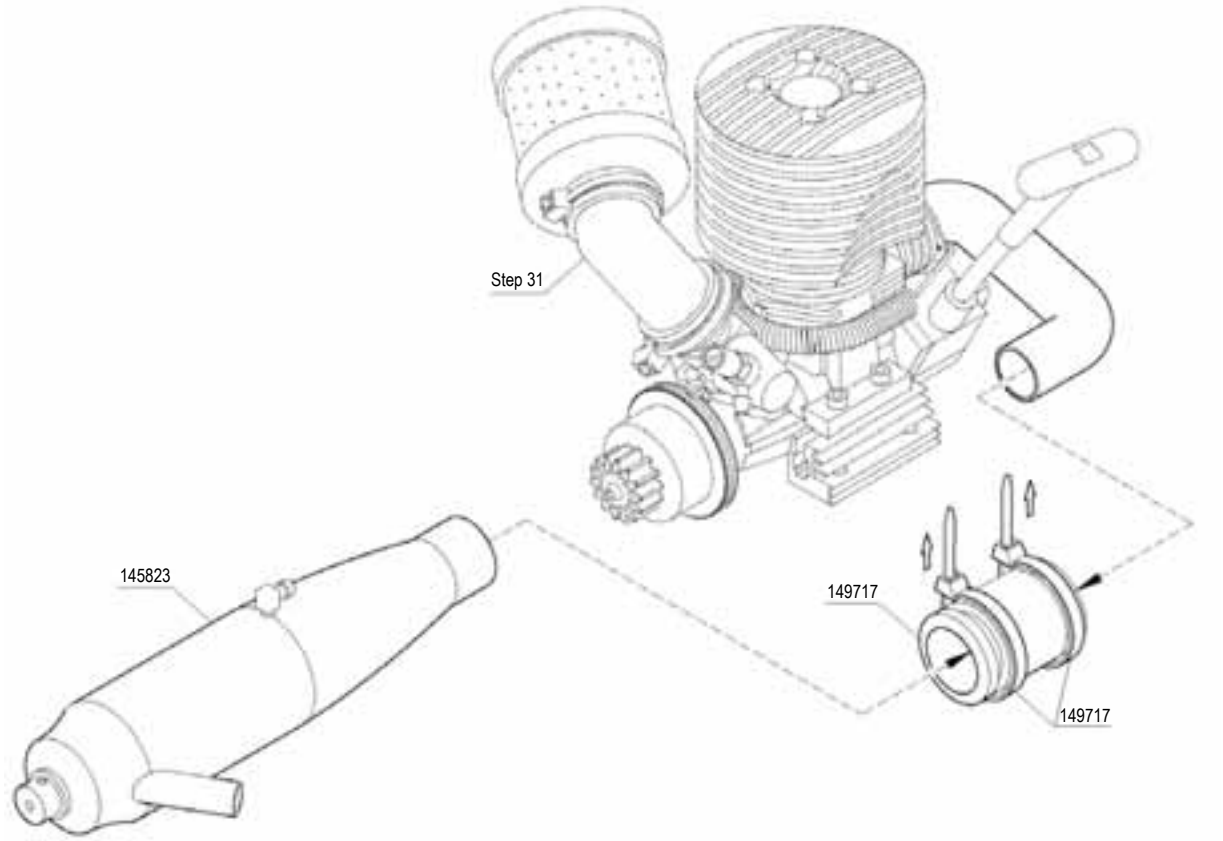
STEP 31: AIR FILTER

(148600) F/H Tapping Screw 3x10mm -- 1



(149571)
Air
Filter Oil - Not
Included

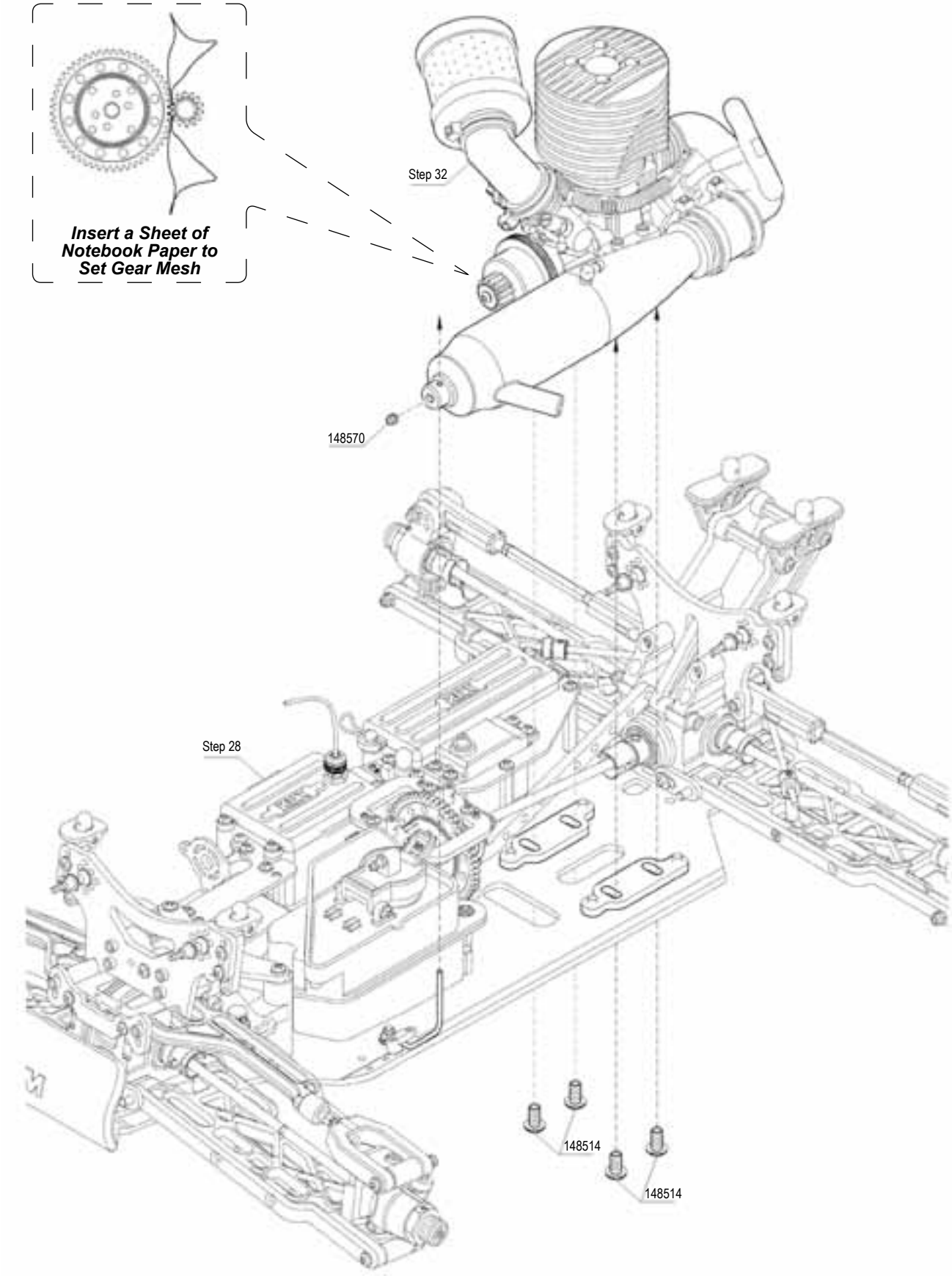
STEP 32: TUNED PIPE



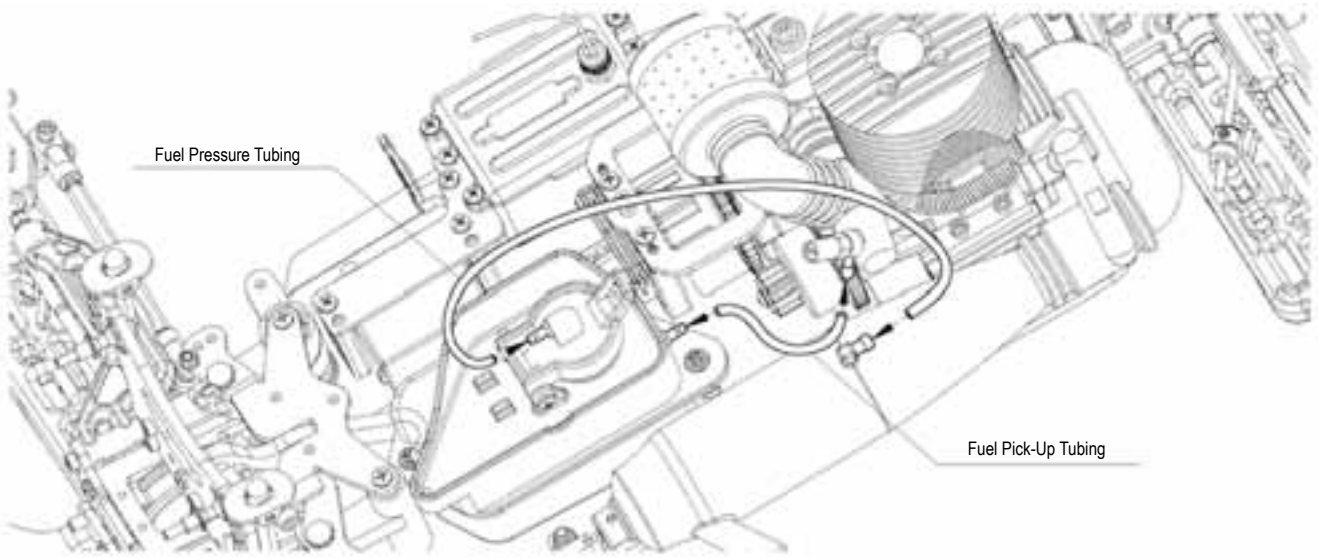
STEP 33: ENGINE MOUNTING

(148570) Grub Screw w/Threadlock 4x4mm -- 1

(148514) Button Head Machine Screw w/Threadlock 5x10mm -- 4



STEP 34: FUEL PICK-UP AND PRESSURE TUBING



STEP 35: SHOCK BODIES AND SHOCK SHAFTS

(149842) Lock Nut 2.6mm -- 4

(149842) Washer 2.5x5.9x0.5mm -- 4

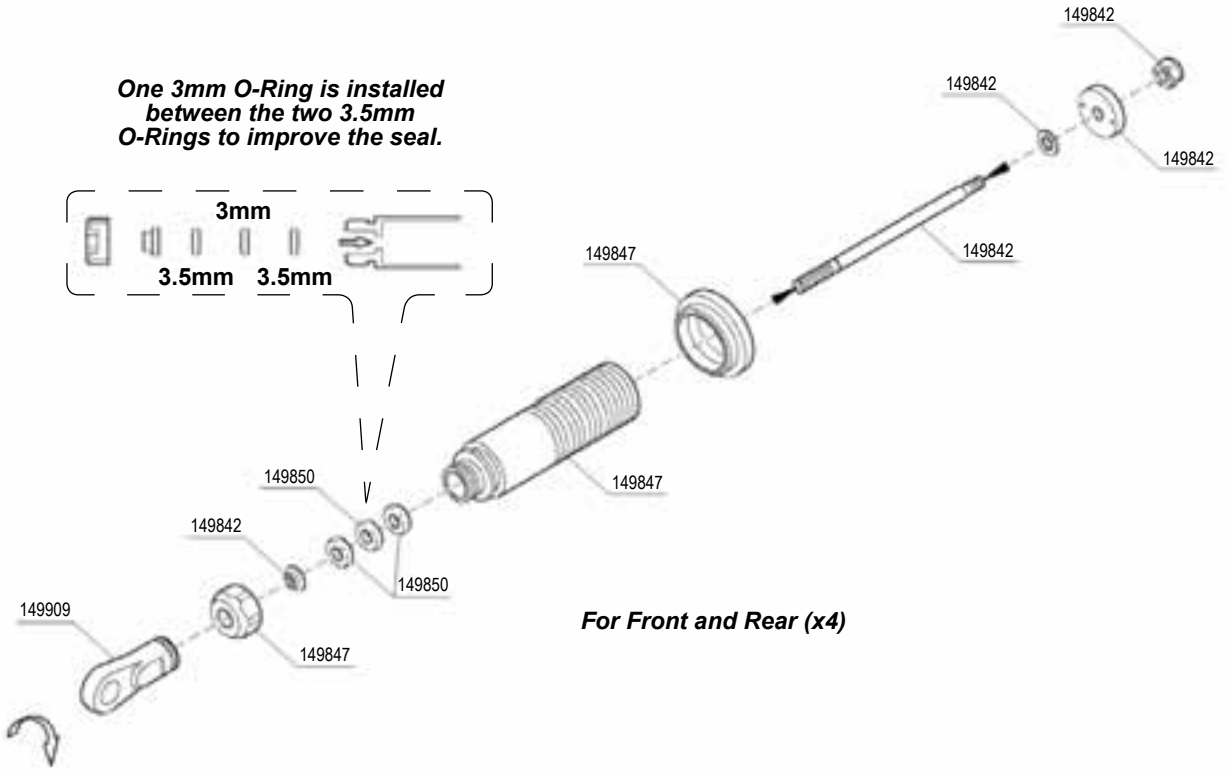
(149850) O-Ring 3mm -- 4

(149850) O-Ring 3.5mm -- 8

(149847) Shock Body 14x53mm -- 4

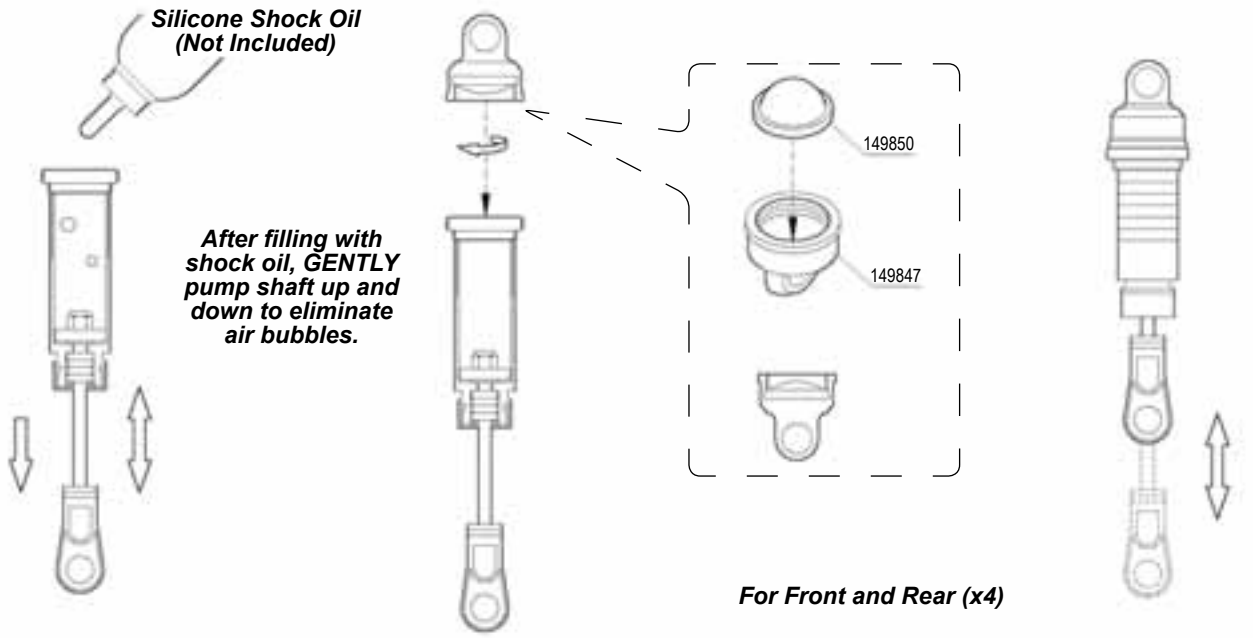
(149842) Shock Shaft 3.5x61mm -- 4

One 3mm O-Ring is installed between the two 3.5mm O-Rings to improve the seal.



For Front and Rear (x4)

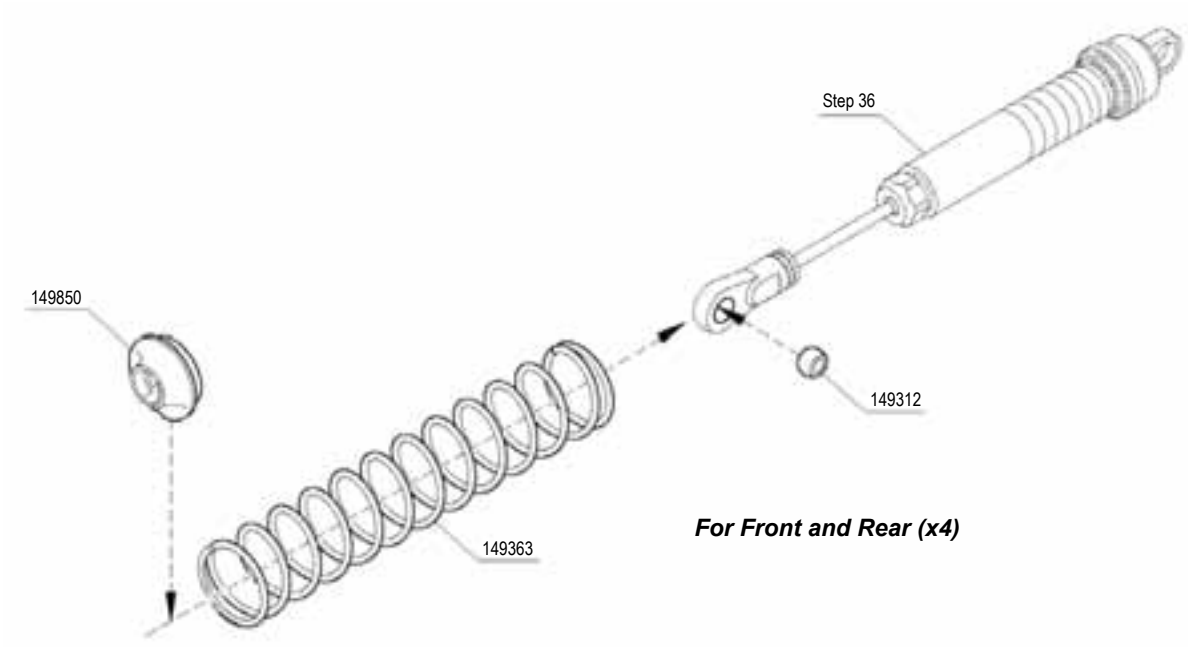
STEP 36: SHOCK OIL


Silicone Shock Oil
(Not Included)
After filling with shock oil, GENTLY pump shaft up and down to eliminate air bubbles.
149850
149847

For Front and Rear (x4)

STEP 37: SHOCK SPRINGS

(149363) Shock Spring 80.5x1.6mm Yellow -- 4

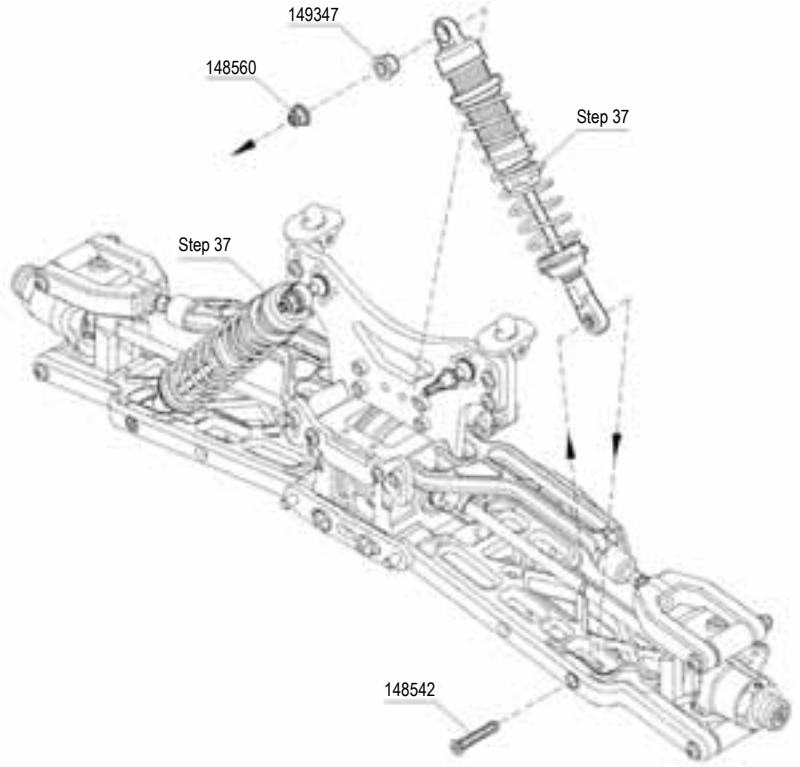


For Front and Rear (x4)

STEP 38: FRONT SHOCK MOUNTING

(148560) Flanged Lock Nut 3mm -- 2

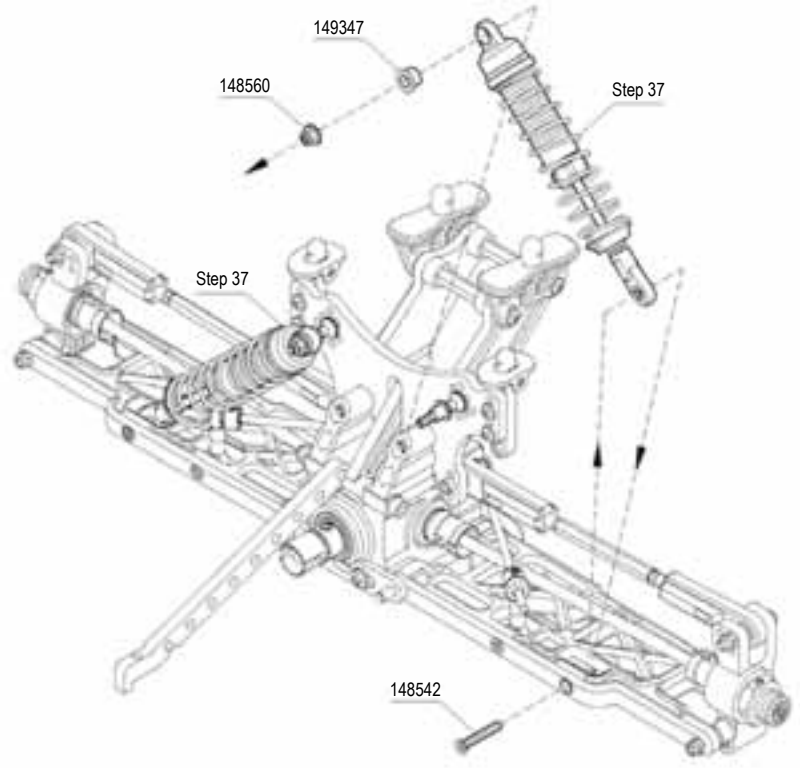
(148542) F/H Machine Screw 3x20mm -- 2



STEP 39: REAR SHOCK MOUNTING

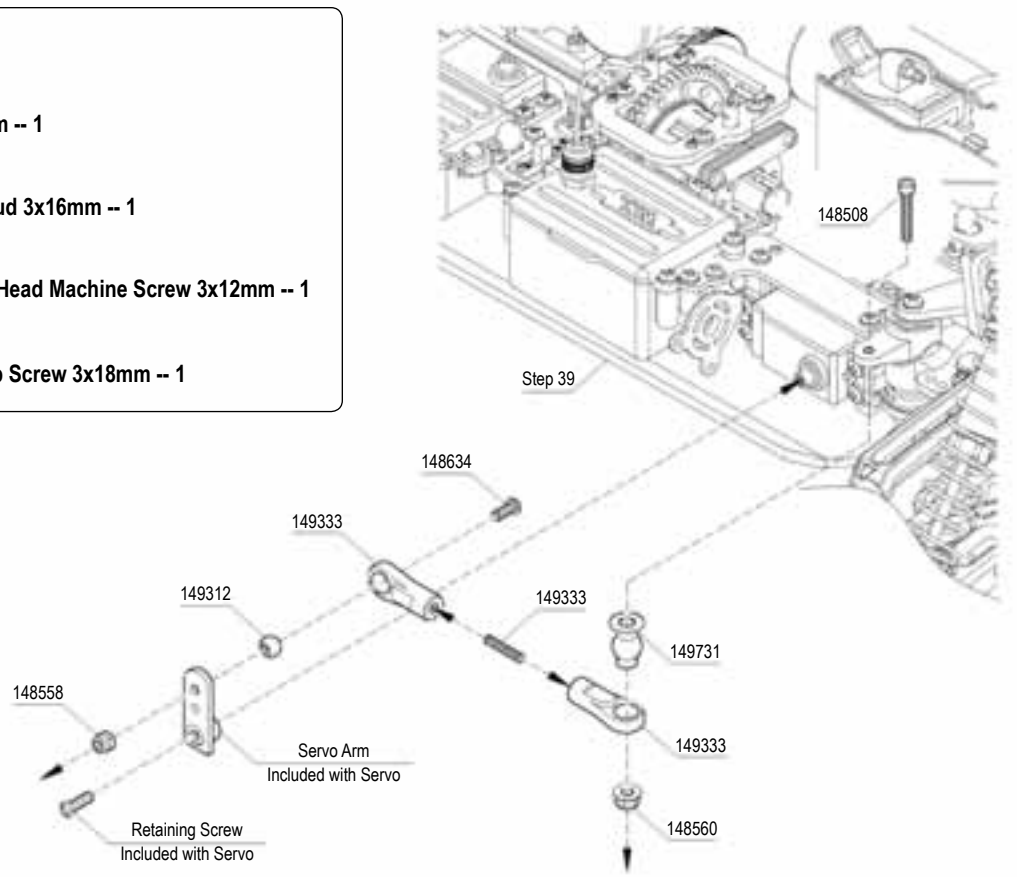
(148560) Flanged Lock Nut 3mm -- 2

(148542) F/H Machine Screw 3x20mm -- 2

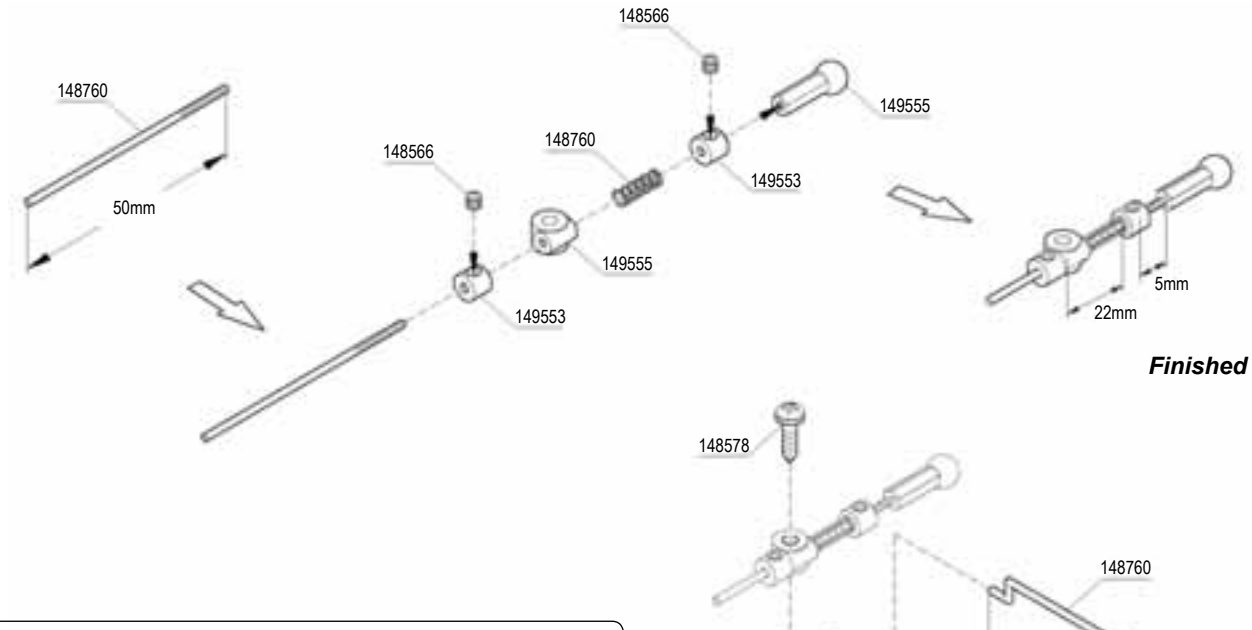


STEP 40: STEERING LINKAGE

- (148558) Lock Nut 3mm -- 1
- (148560) Flanged Lock Nut 3mm -- 1
- (149333) Threaded Stud 3x16mm -- 1
- (148634) Button Head Machine Screw 3x12mm -- 1
- (148508) Cap Screw 3x18mm -- 1

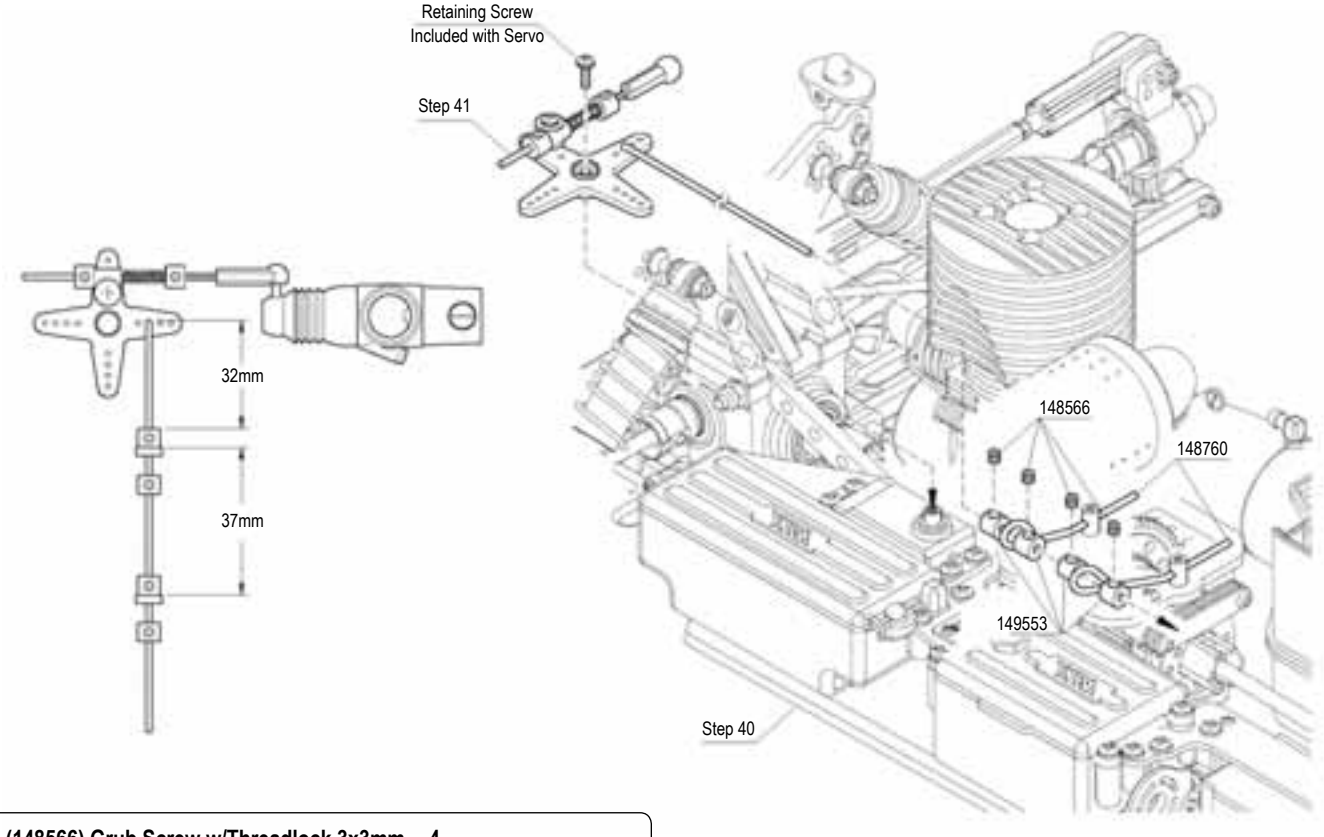


STEP 41: THROTTLE AND BRAKE LINKAGE



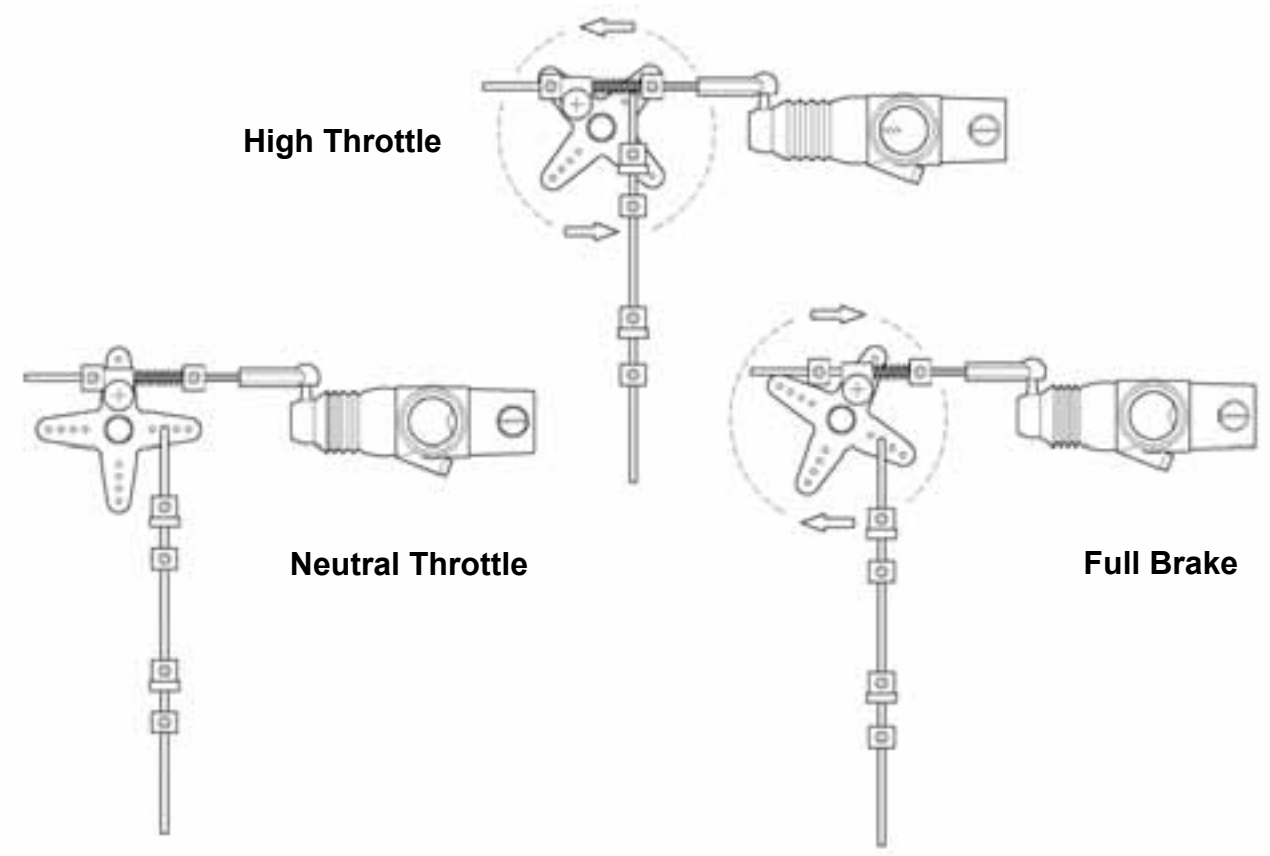
- (148566) Grub Screw w/Threadlock 3x3mm -- 2
- (148760) Spring 18mm -- 1
- (148578) Button Head Tapping Screw 3x12mm -- 1

STEP 42: THROTTLE AND BRAKE LINKAGE MOUNTING

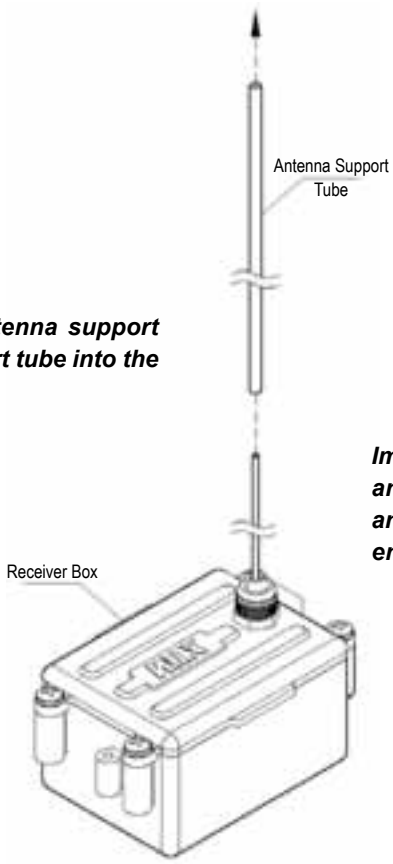


(148566) Grub Screw w/Threadlock 3x3mm -- 4

STEP 43: THROTTLE AND BRAKE LINKAGE ADJUSTMENT



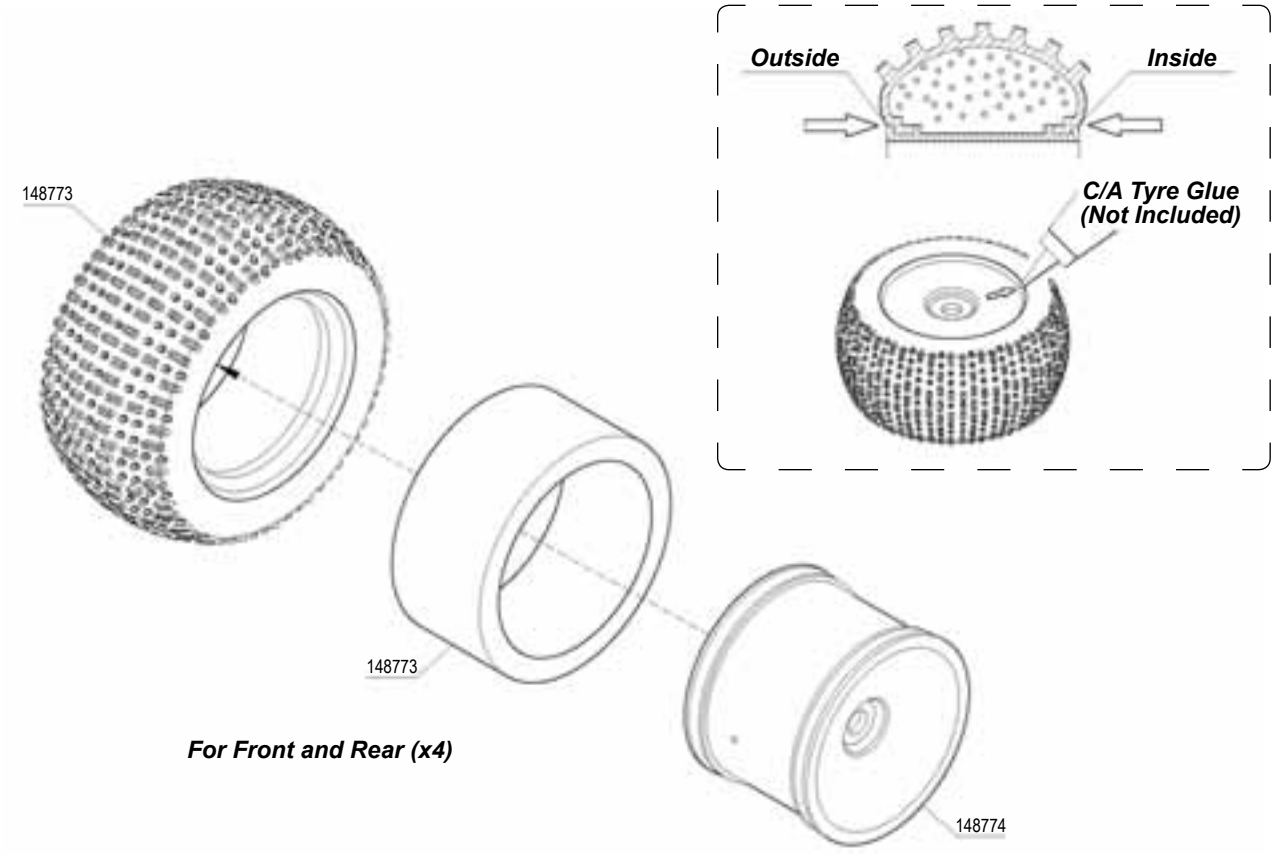
STEP 44: ANTENNA SUPPORT TUBE



Slide the antenna through the antenna support tube, then push the antenna support tube into the antenna mount.

Important: DO NOT cut the excess antenna shorter. Allow the excess antenna wire to hang out beyond the end of the antenna support tube.

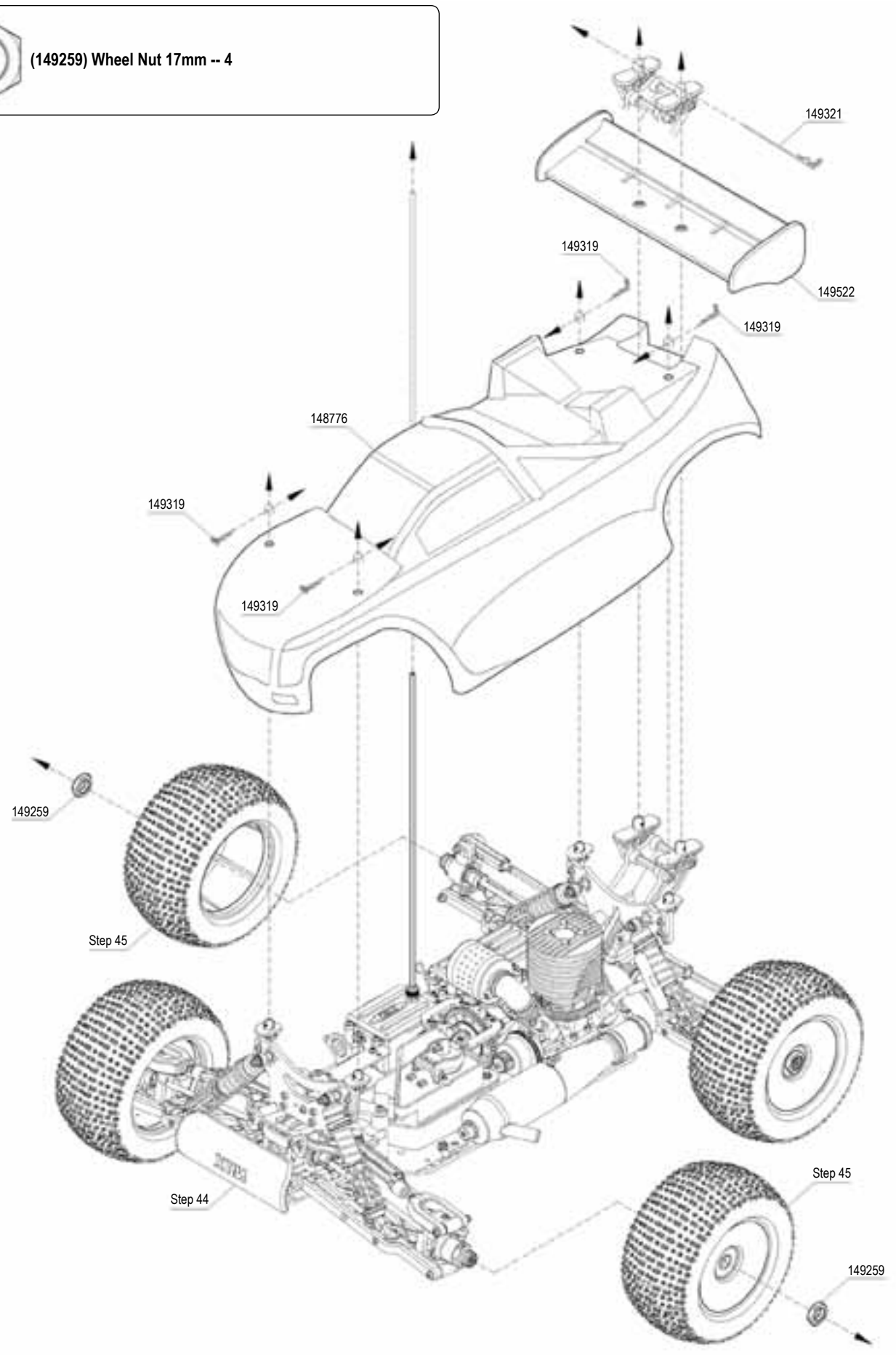
STEP 45: WHEELS AND TYRES



For Front and Rear (x4)

STEP 46: WHEELS, BODY AND WING MOUNTING

(149259) Wheel Nut 17mm -- 4



REPLACEMENT PARTS LIST

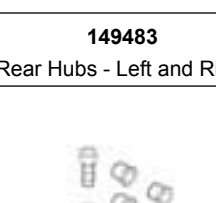
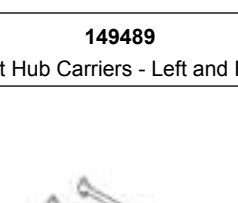
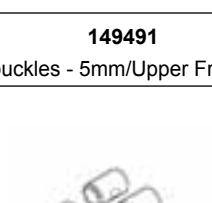
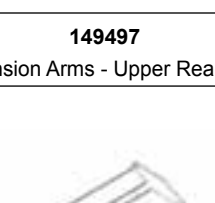
We stock a complete set of replacement parts for your ***X***ST 4WD Truggy RTR. Listed below are the replacement parts that are available along with their respective part numbers for easy ordering convenience.

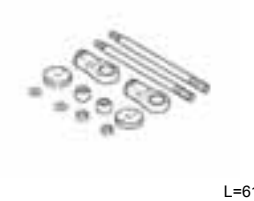
When it comes time to order replacement parts, we recommend ordering directly from your local hobby retailer.

If your hobby retailer does not stock XTM Racing products, contact your closest distributor for a local dealer, using the Customer Service Information on page 3.

		 Also for option 2-Speed Transmission	
145823 Dual-Chamber Tuned Pipe - Black	**148623** Differential Shim 8x12x0.4mm (Pk10)	**148624** Differential Shim 8x12x0.2mm (Pk10)	**148625** Differential Shim 8x12x0.8mm (Pk10)
			 Aluminium
148760 Linkage and Tuned Pipe Mount Set	**148761** Front Shock Tower - 4mm/6061/Black	**148762** Rear Shock Tower - 4mm/6061/Black	**148764** Spur Gear - 53T
148766 Chassis - 3mm/6061/Black	**148767** Radio Plate (Front) - 2mm/6061/Black	**148768** Radio Plate (Rear) - 2mm/6061/Black	**148769** Fuel Tank - 150cc
	 L=84.5mm	 L=117mm	
148770 Brake Plate - 3mm/6061/Black	**148771** Turnbuckles - 5mm/Upper Rear (Pk2)	**148772** Swing Shaft - Centre Front (Pk2)	**148773** 'Trackers' Tyres with Inserts (Pk2)
		Sorry. No Photo Available	 Fr/Rr L=133mm
148774 Dish Wheel - Black (Pk2)	**148776** Body - Preprinted Blue & Yellow w/Decals	**148777** Decal Set	**148779** Shock Set w/Yellow Springs

2.5mm / 2.8mm / 3.5mm			
148780 Sway Bar Set	**148889** Ball Bearing 3x6x2.5mm (Pk2)	**149259** Wheel Nuts - 17mm/Black (Pk4)	**149261** Hex Hubs - 17mm/Black (Pk2)
149271 Wing Mount	**149273** Chassis Brace - Front	**149274** Chassis Brace - Rear	**149275** Upper Suspension Plate - Front
149281 Centre Differential Mount	**149283** Brake Disc Guard (Pk2)	**149284** Brake Pad Set	**149286** Servo Saver Plate - 3mm/6061/Black
L=27.5mm			L=14.2mm
149287 Fuel Tank Post	**149288** Transponder Mount	**149301** Rear Wheel Shafts (Pk2)	**149307** Shock Mounting Studs (Pk4)
		L=27mm	L=80mm
149312 Balls 6.9x4.9mm - Steel (Pk4)	**149317** Pinion Output Joints (Pk2)	**149319** Body Clips - Type 'R' (Pk10)	**149321** Body Clips - Type 'R' (Pk5)
		L=90.5mm	
149328 Brake Cam	**149333** Steering Servo Rod Set	**149334** Steering Rod Set - 5mm (Tie-Rods)	**149343** Steering Knuckles (Pk2)

149347 Shock Spring Spacer & Bushing Set	**149363** Shock Springs - 1.6mm/Yellow (Pk2)	**149377** Hub Studs - Front (Pk4)	**149381** Hub Studs - Rear (Pk4)
149408 Clutch Shoes & Springs - 1mm (Pk3)	**149409** Air Filter Assembly	**149410** Air Filter Elbow	**149411** Air Filter Elements (Pk2)
149414 3-Shoe Clutch Nut - SG Shaft	**149415** Exhaust Header w/Spring	**149453** Servo Saver Plastic Parts	**149455** Servo Saver Metal Parts
149457 Servo Saver Screw Set	**149467** Radio Tray Post	**149469** Brake Disc	**149471** Servo Mount - Throttle/Brake
149483 Rear Hubs - Left and Right	**149489** Front Hub Carriers - Left and Right	**149491** Turnbuckles - 5mm/Upper Front (Pk2)	**149497** Suspension Arms - Upper Rear (Pk4)
			
149499 Rocker Bolts and Bushings (Pk4)	**149501** Swing Shaft - Centre Rear (Pk2)	**149506** CVD Universal Joint Rebuild Kit	**149522** Bi-Level Wing - Black

			L=22.5mm
149525 Clutch Bell - 13T	**149528** Flywheel (for 3-Shoe Clutch)	**149543** Balls 7x3mm - Steel (Pk4)	**149549** Ball End - 4mm for 7mm Ball (Pk4)
149553 Rod Stopper Set	**149555** Plastic Parts Accessories	**149559** Flanged Ball Bearing 5x8x2.5mm (Pk2)	**149563** Ball Bearing 8x16x5mm
149567 Bushing 6x10x3mm (Pk4)	**149577** Exhaust Header Spring w/Gasket	**149717** Exhaust Coupler - Yellow	**149731** 4mm Ball with Flange (Pk4)
149762 Body Mount Set (3 Hole)	**149778** Differential Housing Cover - Aluminium	**149781** Suspension Arms - Lower Front (Pk2)	**149783** Suspension Arms - Lower Rear (Pk2)
	L=138.6mm	 L=61mm	L=53mm
149788 Suspension Arms - Upper Front (Pk2)	**149791** Swing Shaft - Rear (Pk2)	**149842** Shock Shaft Set - 3.5mm	**149847** Shock Body Set - 3.5mm/Black
includes 2x 3mm O-Ring			
149850 Shock Rebuild Kit - 3.5mm	**149860** Antenna Mount	**149870** Battery Box	**149871** Receiver Box

149884 Servo Mount Set - Steering	**149891** Brake Output Joints (Pk2)	**149893** Differential Output Joints (Pk2)	**149894** Suspension Holder Supports (Pk2)
	 Steel	 Steel	
149895 Differential Set - Bevel Type	**149897** Ring Gear - 43T Straight Cut	**149898** Pinion Gear - 13T Straight Cut	**149899** O-Rings for Diff Output Shafts (Pk10)
 L=67.2mm			
149901 Lower Hinge Pins (Pk4)	**149905** Gaskets for Bevel Differentials (Pk5)	**149906** Bumper - Front	**149907** Wing Mount Stabiliser Rod
 L=25.5mm			
149909 Ball Ends - 3.5mm for 7mm Ball (Pk4)	**149911** Gearbox Halves - Front or Rear	**149915** Suspension Plate Holders	**149916** Suspension Plate - Front or Rear
149918 Differential Housing - Front or Rear	**149923** Steering Plate - 3mm/6061/Black	**149925** Engine Mounts	**149926** Engine Mount Spacers - 4mm/6061/Black
 L=168.7mm			
149963 CVD Universal Joint - Front (Pk2)			

XTM PART #	DESCRIPTION	REPLACEMENT QUANTITY
148566	Grub Screws with Threadlock 3x3mm	QTY. 5
148570	Grub Screws with Threadlock 4x4mm	QTY. 10
148572	Grub Screws with Threadlock 5x4mm	QTY. 5
148574	Grub Screws with Threadlock 5x5mm	QTY. 5
148558	Lock Nuts - 3mm	QTY. 10
148559	Lock Nuts - 4mm	QTY. 10
148560	Flanged Lock Nuts - 3mm	QTY. 5
148593	Round Head Tapping Screws 2x10mm	QTY. 10
148576	Button Head Tapping Screws 3x10mm	QTY. 10
148578	Button Head Tapping Screws 3x12mm	QTY. 10
148612	Button Head Tapping Screws 3x18mm	QTY. 10
148616	Button Head Tapping Screws 3x25mm	QTY. 10
148583	Button Head Tapping Screws 3x38mm	QTY. 10
148615	Button Head Tapping Screws 4x8mm	QTY. 10
148584	Button Head Tapping Screws 4x12mm	QTY. 10
148600	F/H Tapping Screws 3x10mm	QTY. 10
148596	F/H Tapping Screws 3x12mm	QTY. 10
148602	F/H Tapping Screws 3x16mm	QTY. 10
148607	F/H Tapping Screws 4x12mm	QTY. 10
148598	F/H Tapping Screws 4x16mm	QTY. 10
148609	F/H Tapping Screws 4x18mm	QTY. 10
148550	Washer Head Machine Screws with Threadlock 3x10mm	QTY. 5
148554	Washer Head Machine Screws with Threadlock 4x10mm	QTY. 5
148502	Button Head Machine Screws 3x6mm (Also for option 2-Speed Transmission)	QTY. 10
148525	Button Head Machine Screws with Threadlock 3x8mm	QTY. 5
148634	Button Head Machine Screws 3x12mm	QTY. 10
148636	Button Head Machine Screws 3x25mm	QTY. 10
148514	Button Head Machine Screws with Threadlock 5x10mm	QTY. 5
148546	F/H Machine Screws with Threadlock 3x8mm (Also for option 2-Speed Transmission)	QTY. 5
148547	F/H Machine Screws 3x12mm	QTY. 10
148540	F/H Machine Screws 3x15mm	QTY. 10
148542	F/H Machine Screws 3x20mm	QTY. 10
148548	F/H Machine Screws with Threadlock 4x10mm	QTY. 5
148504	Cap Screws 3x14mm	QTY. 10
148506	Cap Screws 3x16mm	QTY. 10
148508	Cap Screws 3x18mm	QTY. 10
148509	Cap Screws 3x20mm	QTY. 10
148511	Cap Screws 3x25mm	QTY. 10
148650	Cap Screws 3x42mm	QTY. 5
148649	Cap Screws 4x45mm	QTY. 5
148507	Cap Screws 4x50mm	QTY. 5
148651	Cap Screws 4x55mm	QTY. 5
148620	Washer - 3x8x1mm	QTY. 10

OPTION PARTS LIST

We stock many option parts for your XT2 Racer - Track Edition RTR. Listed below are the option parts that are available along with their respective part numbers for easy ordering convenience.

When it comes time to order option parts, we recommend ordering directly from your local hobby retailer.

If your hobby retailer does not stock XTM Racing products, contact your closest distributor for a local dealer, using the Customer Service Information on page 3.

Shock Absorber Springs

1.4, 1.5, 1.6 & 1.7mm L=80.5mm	Fr/Rr L=80.5mm	Fr/Rr L=80.5mm	Fr/Rr L=80.5mm
149320 Shock Spring Set - Front or Rear	**149370** Shock Springs - 1.4mm/Blue/Pk2	**149366** Shock Springs - 1.5mm/White/Pk2	**149364** Shock Springs - 1.7mm/Black/Pk2

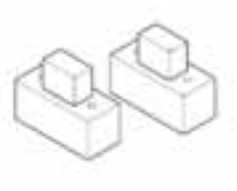
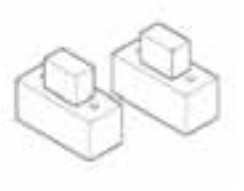
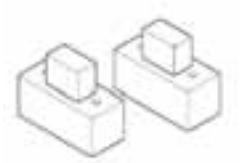
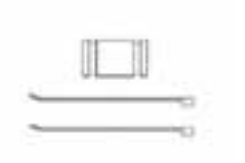
Hardened (7075) Aluminium Parts

Replaces 149343	Replaces 149489	Replaces 149916	Replaces 149453
149268 Steering Knuckles (7075) - Left & Right	**149269** Front Hub Carriers (7075) - Left & Right	**149400** Suspension Plate (7075) - Front or Rear	**149454** Servo Saver (7075) with Bearings
Replaces 149923	Replaces 149483	Replaces 149788	Replaces 149788
149458 Steering Plate (7075)	**149484** Rear Hubs (7075) - Left and Right	**149496** Outer Arms (7075) - Upper Front	**149857** Inner Arms (7075) - Upper Front
Replaces 149915	Replaces 149915	Replaces 149915	Replaces 149894
149991 Front Suspension Holder (7075)	**149992** Rear Suspension Holder - 2º (7075)	**149993** Rear Suspension Holder - 3º (7075)	**149994** Suspension Holder Support (7075)

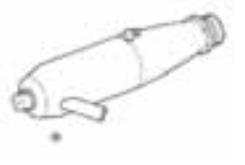
Clutch Bells (Single Speed)

149580 Clutch Bell - 14T (Single Speed)	**149581** Clutch Bell - 15T (Single Speed)	**149582** Clutch Bell - 16T (Single Speed)	**149583** Clutch Bell - 17T (Single Speed)
149584 Clutch Bell - 18T (Single Speed)			

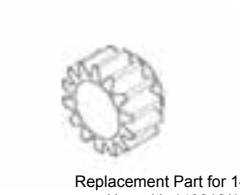
Silicone Parts (Protects against Moisture, Dust and Dirt)

			
149538 CVD Dust Boots - Black (Pk4)	**149539** CVD Dust Boots - Blue (Pk4)	**149541** Switch Covers - Red and Yellow	**149544** Switch Covers - Blue (Pk2)
	 Use in Place of 149717	For Shock Absorbers	For Shock Absorbers
149545 Switch Covers - Yellow (Pk2)	**149718** Exhaust Coupler - Blue	**149746** Shock Bump Stops - 60lbs/Yellow (Pk4)	**149747** Shock Bump Stops - 40lbs/Blue (Pk4)

Tuned Pipe Parts (Power Boosting)

Use with 150016	 Use with 150015	Spare Springs for 150015/150016	
150015 Exhaust Header w/Springs - Polished	**150016** Tuned Pipe - Polished	**150017** Retainer Spring (Pk3) - Tuned Pipe	

2 Speed Transmission

Use with 149313	Use With 149825	Replacement Part for 149825	Replacement Part for 149825
149825 2-Speed Conversion Kit	**149313** Output Joint (Pk2)	**149560** Ball Bearing 5x10x4mm	**149562** Ball Bearing 8x12x3.5mm
Replacement Part for 149825	Replacement Part for 149825	Replacement Part for 149825	Replacement Part for 149825
149563 Ball Bearing 8x16x5mm	**150009** Ball Bearing 5x8x2.5mm	**149300** 2-Speed Main Gear Shaft	**149661** 2-Speed Clutch Housing
Replacement Part for 149825	Replacement Part for 149825	Option Part for 149825	Option Part for 149825. Use with 149799
149663 2-Speed One-Way Mount w/Bearing	**149666** 2-Speed Clutch	**149797** 2-Speed Clutch Bell - 12T/17T	**149798** Clutch Bell for 12T/17T Pinion Gears
Option Part for 149825. Use with 149798	Replacement Part for 149825	 Replacement Part for 149825 Use with 149810/149819	Option part for 149825 Use with 149810/149821
149799 Pinion Gear 12T/17T - for 2-Speed	**149810** 2-Speed Clutch Bell w/o Pinion Gears	**149814** Pinion Gear - 14T (2-Speed)	**149816** Pinion Gear - 16T (2-Speed)
Replacement Part for 149825 Use with 149810/149814	Option Part for 149825 Use with 149810/149816	Replacement Part for 149825	Replacement Part for 149825
149819 Pinion Gear - 19T (2-Speed)	**149821** Pinion Gear - 21T (2-Speed)	**149826** 2-Speed Gear - 45T	**149827** 2-Speed Gear - 50T

General Options

Replaces Engine Pull-start (Requires 7.2V battery)

145890
Sure Start Electric Starting System

146077
Electronic Failsafe

149546
Fuel Filter

For O.S Engines

149407
Clutch Nut Assembly - O.S.

149520
Bi-Level Wing - White

149521
Bi-Level Wing - Yellow

Use in Place of 148764

149277
Spur Gear - 48T

148778
Dish Wheels - White (Pk2)

Fits wheel with 14mm hex

146110
Axle Adapters (14mm) - Rear

Fits wheel with 14mm hex

146112
Axle Adapters (14mm) - Front CVD

149552
3-Shoe Clutch Kit w/1mm Springs

Use with Aluminium Ball Ends

150019
Foam Dust Pads (Pk10)

For 3.5mm Shock Shafts

150020
Aluminium Ball End (Pk2)

4mm Reverse Thread

150021
Aluminium Ball End (Pk2) w/Mounts

4mm Thread

150022
Aluminium Ball End (Pk2) w/Mounts

Titanium Replaces 149491

149492
Turnbuckle - 5mm/Upper Front (Pk2)

L=25.5mm

149726
Ball Ends - 3mm for 7mm Ball (Pk4)

L=22.5mm

149547
Ball Ends - 3mm for 7mm Ball (Pk4)

L=50mm Replaces 149381

149873
Upper Arm Studs - Front (Pk4)

L=42mm Replaces 149377

149875
Upper Arm Studs - Rear (Pk4)

Assembled

148891
Differential - Front or Rear

Assembled

148765
Differential (53T) - Centre

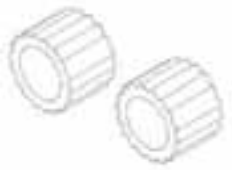
148775
Body Shell - Clear w/Decals

148763
Body Mount Set (4 Hole)

100% Silicone Oil (for Differentials and Shock Absorbers)

146700	Silicone Oil # 250 - 2.5oz
146701	Silicone Oil # 300 - 2.5oz
146702	Silicone Oil # 350 - 2.5oz
146703	Silicone Oil # 400 - 2.5oz (standard for shock absorbers)
146704	Silicone Oil # 450 - 2.5oz
146705	Silicone Oil # 500 - 2.5oz
146706	Silicone Oil # 550 - 2.5oz
146707	Silicone Oil # 600 - 2.5oz
146708	Silicone Oil # 650 - 2.5oz
146709	Silicone Oil # 700 - 2.5oz
146710	Silicone Oil # 1000 - 2.5oz (standard for rear differential)
146711	Silicone Oil # 2000 - 2.5oz
146712	Silicone Oil # 3000 - 2.5oz (standard for front differential)
146713	Silicone Oil # 4000 - 2.5oz
146714	Silicone Oil # 5000 - 2.5oz (standard for centre differential)
146715	Silicone Oil # 7000 - 2.5oz
146716	Silicone Oil # 10000 - 2.5oz

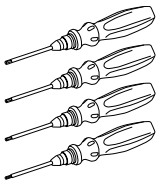
149571
Air Filter Oil



For wet/dusty conditions

149412
Prefilter Sleeves

Tools



1.5, 2, 2.5 & 3mm

149187
Hex Wrench Set - Metric (4pcs)

149500
Tool Set

149959
Clutch Tool for Leading Clutch Shoes

IMPORTANT WARRANTY SERVICE INFORMATION

Before returning your ***X***ST 4WD Truggy RTR for warranty consideration, the status of the unit must be within the terms of the Warranty Information as stated below. Do not return your ***X***ST 4WD Truggy RTR to the place of purchase. They are not authorised nor equipped to perform warranty work on XTM Racing products. When requesting warranty service, please observe the following:

- Crash damage will not be covered under warranty. Do not request warranty service for a crash-damaged product.
- Always send your ***X***ST 4WD Truggy RTR complete with the transmitter. Please unplug and/or remove the batteries both from the transmitter and the ***X***ST 4WD Truggy RTR (battery box) before returning it. Please also remove all fuel as applicable. We like to have the ***X***ST 4WD Truggy RTR complete so it can be thoroughly tested before returning it to you.
- Include a note detailing the problem or service you are requesting. Service cannot be provided without this information. Include your daytime phone number, shipping address and/or email address in the event we need more details pertaining to the service requested.
- If your ***X***ST 4WD Truggy RTR is out of the warranty period you may request an estimate of services at the time you return it for service. An omission of this request implies permission for Global Services/Ripmax Ltd. to service your ***X***ST 4WD Truggy RTR at our discretion.
- Include a method of payment for any service charges.
- Send the unit to us by United Parcel Service, Federal Express or by Insured Mail. Postage is nonrefundable. Send your package to:

In North America:

Global Services
18480 Bandilier Circle
Fountain Valley, CA 92708

Phone: (714) 963-0329
Fax: (714) 964-6236
Email: service@globalhobby.net

In Europe:

Ripmax Ltd.
241 Green Street
Enfield, EN3 7SJ, U.K.

Phone: (0) 20 8282 7500
Fax: (0) 20 8282 7501
Email: xtm@ripmax.com

CE

WARRANTY INFORMATION

In North America
Your XTM Racing ***X***ST 4WD Truggy RTR is warranted against manufacturer defects in materials and workmanship for a period of 90 days from the date of purchase. Warranty service will be provided within 90 days of the date of purchase only if you are able to provide the original or a copy of the original dated sales receipt.

In the United Kingdom/Europe
Your XTM Racing ***X***ST 4WD Truggy RTR is warranted against manufacturer defects in materials and workmanship for a period of 1 (one) year from the date of purchase. Warranty service will be provided within 1 (one) year of the date of purchase only if you are able to provide the original or a copy of the original dated sales receipt. This does not affect your statutory rights.